

Efficacy of MiCBT for Family Carers:
Reducing Psychological Distress and Improving Mindfulness Self-Efficacy

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Statement

I declare that this thesis is my own work and that, to the best of my knowledge and belief, it does not contain material from published sources without proper acknowledgement, nor does it contain material which has been accepted for the award of any other higher degree or graduate diploma in any university.

Ticia Becker

3rd June 2013

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"I can do all things through Christ who gives me strength"

(Philippians 4:13 – The Holy Bible, NLT)

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Abstract

Empirical evidence to support the effectiveness of mindfulness-based interventions in improving psychological well-being and mindfulness ability has been well documented in clinical populations, and more recently in non-clinical populations such as family carers. The current study evaluated the effectiveness of Mindfulness-integrated Cognitive Behavioural therapy (MiCBT; Cayoun, 2011) delivered over a 9-week group program in a sample of 33 family carers. As hypothesised on the basis of previous research, family carers reported significant reductions in perceived levels of depression, anxiety and stress, and significant improvements in mindfulness-based self-efficacy and mindfulness-related skills over the duration of the program. Benefits were also maintained at 1-month follow-up. Correlation analyses indicated preliminary evidence for a negative relationship between carers' levels of stress and mindfulness-based self-efficacy. However, due to the small sample size, further research directions are suggested to confirm the effectiveness of MiCBT for family carers.

Care-giving

Care-giving is both a common and pivotal phenomenon within Australia's current ageing population. According to the Australian Bureau of Statistics (2010a), the proportion of older aged individuals (i.e., 65 years and older) increased by 9% from 1901 to 2009, and by a further 3.3% from 2009 to 2010 (ABS, 2010c). Further, with the prevalence of disability increasing steadily with age (ABS, 2009), population ageing is projected to have significant implications for Australia, including placing greater demand on health care and aged services (ABS, 2010b). Furthermore, with the likelihood of a resulting increase in financial demands on the health care sector, it is likely that the demand for primary unpaid care-giving will also expand (Herrman et al., 1993). Hence, a greater number of individuals may find themselves in a position of providing unpaid support and care to family members with chronic illness or disability in future years.

However, caring for another individual's needs can be an emotionally demanding and stressful experience. In particular, caring for the frail elderly or individuals with mental, physical, or intellectual disorders or disabilities has been empirically associated with chronic stress (Shapiro, Astin, Bishop, & Cordova, 2005). Moreover, the chronic stress inherent in care-giving has been associated with decreased job satisfaction (Blegen, 1993), disrupted personal relationships (Gallegos, Bettinardi-Angres, & Talbott, 1990), lowered life satisfaction and increased incidence of negative affect (Schofield & Herrman, 1993), and stress related psychological problems (Jain, Lall, McLaughlin, & Johnson, 1996; Shapiro, Brown, & Biegel, 2007), such as depression and anxiety (Tyssen, Vaglum, Gronvold, & Ekeberg, 2001). Indeed, the negative impacts of care-giving on the mental health of

professional care-givers have been substantiated in the literature (Savage & Bailey, 2004).

Over more recent years, a growing body of research has highlighted that family care-giving in particular is associated with significant stress (Epstein-Lubow, McBee, Darling, Armey, & Miller, 2011). Family care-giving has been defined as providing unpaid care and support to family members, neighbours or friends who have a disability, mental illness, chronic condition, terminal illness or who are frail and aged (Carers Tasmania, 2010). These carers are often less trained, and consequently often less equipped, to deal with the stresses inherent in care-giving than health professionals. Hence, family carers may be at a greater risk of developing stress-related psychological symptoms associated with the on-going challenges of care-giving (Klatt, Buckworth, & Malarkey, 2009), particularly when stress is left untreated (see McCabe and Schneiderman, 1985; Seyle, 1976; Shapiro, Schwartz, & Bonner, 1998).

In addition, family carers are also less likely to be financially and emotionally supported in their care-giving role than professional health caregivers, who often have the support of their place of employment. Hence, family carers need to seek out support from private or Government-funded financial, practical, social and psychological services that are able to equip and support them. One such service is Carers Australia; a nationwide Government-funded organisation dedicated to providing supports and meeting the needs of family carers within local communities. As a national body representing Australia's carers, Carers Australia aims to promote and support family carers and the people they care for through effective advocacy and a range of supportive services, including counselling.

However, the implementation of therapeutic interventions designed specifically to reduce the impact of stress inherent in family care-giving is generally lacking (Edwards, Hannigan, Fothergill, & Burnard, 2002). Also, there have been few studies investigating the development and effectiveness of stress reduction interventions for carers (Epstein-Lubow, Miller, & McBee, 2006; Franco, Sola Mdel, & Justo, 2010) and research concerning stress reduction in family care-giving, in particular, is sparse (Epstein-Lubow et al., 2011). Hence, there is a great need for the development of stress-reduction interventions designed to equip carers with adaptive coping skills to deal with the demands of care-giving. In recent years, it has been suggested that learning skills that cultivate mindfulness may help carers cope more effectively with the chronic stresses of care-giving (Epstein-Lubow et al.).

Mindfulness

The cultivation of mindfulness through meditative practices has its roots in Eastern Buddhist traditions, which spans over 25 centuries. However, mindfulness is an inherent human capacity (Kabat-Zinn, 2003) which can be adopted in the absence of any particular spiritual tradition (Allen et al. 2006; Hayes & Shenk, 2004). There have been varied conceptualisations of mindfulness in the Western psychological literature. As a mental state, mindfulness has been referred to as “a heightened sensory awareness of the present moment, free from judgment, reactivity and identification to the experience” (Cayoun, 2011, p.11). Indeed, it has generally been thought of as the intentional control of attention (Baer, Smith, & Allen, 2004; Teasdale, 1999), and acceptance of the present moment experience (Tacón, 2003).

Buddhist teachings suggest that the cultivation of mindfulness leads to the reduction of suffering, improved well-being, and the development of positive

qualities such as awareness, insight, compassion and equanimity (Kabat-Zinn, 2003). Consistent with these claims, research has found the cultivation of mindfulness to be effective in reducing symptoms associated with a variety of medical and psychological disorders (Baer, 2003; Black, Milan, & Sussman, 2009; Labbé, 2011), and in improving overall mood (Anderson, Lau, Segal, & Bishop, 2007; Bränström, Kvillemo, Brandberg, & Moskowitz, 2010), satisfaction with life (Grossman et al., 2010; Koszycki, Benger, Shlik & Bradwejn, 2007), and psychological adjustment in both clinical and healthy populations (Davidson et al., 2003; Kabat-Zinn et al., 1992; Teasdale et al., 2000). Indeed, there has been a widespread interest in the development of mindfulness-based interventions (MBIs) in Western literature over the past three decades.

Mindfulness-based Interventions

The integration of techniques specifically designed to cultivate mindfulness into Western therapeutic practices has led to the development of several MBIs, primarily designed to help clients regulate emotions and cope with everyday experiences more effectively (Escuriex & Labbé, 2011). MBIs often involve both formal (meditation) and informal (action-oriented) mindfulness practices.

During formal practice, clients are comfortably seated with closed eyes, and are taught to focus attention on the breath and body sensations while remaining aware of any cognitive and sensory objects (e.g., thoughts, smells, sounds, etc.) that enter the field of awareness (Labelle, Campbell, & Carlson, 2010). Clients are encouraged to observe arising thoughts and bodily sensations as transient events, whether pleasant or unpleasant, and to accept and experience them in the least possible judgmental way. This is said to reduce any secondary distress that may result from holding onto negative thoughts and sensations (Roemer, Erisman, &

Orsillo, 2008). In contrast, informal mindfulness practices involve being purposefully mindful during everyday experiences (Randall, 2007).

Studies indicate that being more mindful helps to decrease maladaptive patterns of thinking (e.g., rumination) and to cultivate healthier and more adaptive ways of responding to distress cues (Keng, Smoski, & Robins, 2011; Shapiro et al., 2005). Hence, it has been proposed that through the cultivation of mindfulness, the realisation of the impermanence of one's thoughts and bodily sensations, coupled with the development of equanimity (the ability to keep a mental and emotional balance while experiencing stimuli consciously) allows one to be less reactive and respond more appropriately to situations (Cayoun, 2011).

Consistent with this, there is empirical evidence to suggest that MBIs are efficacious in the treatment of a wide variety of disorders (Baer, 2003; Grossman, Niemann, Schmidt & Walach, 2004; Hölzel et al., 2008; Randall, 2007). For example, interventions such as Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 1982), Mindfulness Based Cognitive Therapy (MBCT; Segal, Williams & Teasdale, 2002), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Dialectical Behaviour Therapy (DBT; Linehan, 1993) and Mindfulness-based Relationship Enhancement (Carson, Carson, Gil & Baucom, 2004) have been empirically demonstrated to be effective in improving psychological functioning in a range of populations (see Baer, 2003 for a review), and in addressing a wide range of needs; such as anger, depression and anxiety in children (Semple, Lee & Miller, 2006) and chronic physical and mental illnesses in adults (Bach, Gaudiano, Pankey, Herbert, & Hayes, 2006). In addition, several studies have reported the maintenance of benefits several months to several years

after the completion of the program with continued mindfulness practice (Klatt, Buckworth, & Malarkey, 2009; Whitesman, 2008).

Mindfulness and Care-giving

Recent literature reveals an emergence of studies investigating the potential of MBIs in reducing distress specifically associated with care-giving, and in teaching carers adaptive ways to cope with the demands of their role (Noone & Hastings, 2010; Smith, 2004). Specifically, a range of benefits have been reported through mindfulness training by therapists (Aggs & Bambling, 2010; Escuriex & Labbé, 2011), social workers (Berceli & Napoli, 2006), physicians (Berceli & Napoli), medical students (Shapiro, Schwartz, & Bonner, 1998), other health care professionals (Martin-Asuero & Garcia-Banda, 2010; Richards, Campenni, & Muse-Burke, 2010; Shapiro et al., 2007), and more recently, family carers (Epstein-Lubow et al., 2011).

A systematic review highlighted that mindfulness training has been associated with an overall improvement in the psychosocial functioning of health care providers (Escuriex & Labbé, 2011). For example, health professionals participating in MBSR were found to report greater reductions in perceived stress, psychological distress and job burnout, along with greater increases in satisfaction with life and self-compassion, compared with controls (Shapiro et al., 2005).

Similarly, Martin-Asuero and Garcia-Banda (2010) reported a reduction in self-reported distress amongst health professionals over the duration of an 8-week MBSR group program, with benefits maintained at the 3-month follow up.

Qualitative studies investigating the benefits of MBSR programs for carers working with Alzheimer patients have also documented self-reported decreases in stress,

anxiety and somatic complaints, along with improvements in the ability to cope with stress and satisfaction in the care-giving role (Cash & Whittingham, 2010). In sum, there is considerable evidence to suggest that mindfulness training may help decrease carers' stress, anxiety and rumination, and allow carers to be more present and compassionate during interactions with care recipients (Galantino, Baime, Maguire, Szapary & Farrar, 2005; Pipe et al. 2009; Schenström, Rönnerberg & Bodlund, 2006; Shapiro et al., 2005).

More recently, the potential benefits of mindfulness training for family carers has been investigated by evaluating the efficacy of MBSR within this population. For example, Epstein-Lubow et al. (2011) investigated the potential benefits of an 8-week MBSR program in a very small sample ($N = 9$) of family carers. Despite the small sample size, carers reported significant reductions in levels of depression, perceived stress and burden over the duration of the program. Further benefits in relation to stress and level of burden were also demonstrated 1 month following completion of the program.

Consistent with this, Minor, Carlson, Mackenzie, Zernicke, and Jones (2006) reported similar findings in a larger sample of 44 family carers of children with chronic medical conditions; primarily asthma and diabetes. Specifically, family carers reported significant reduction in perceived stress and significant improvement in mood over the duration of an 8-week MBSR program. Similarly, in a randomised controlled trial involving 36 family carers of patients with Alzheimer's Disease, carers reported improvements in psychological symptoms following participation in a mindfulness-based intervention (Franco et al., 2010). Hence, there is growing evidence to support the effectiveness of MBIs in reducing symptoms associated with the stresses of care-giving, such as anxiety and depression (Birnie, Garland, Carlson,

2010; Epstein-Lubow et al., 2011) amongst carers, and in assisting carers in general self-care (Shapiro et al., 2005).

However, research investigating the efficacy of MBIs for family carers is still in its infancy, with the majority of samples consisting of individuals living in North America, Spain or Canada (Epstein-Lubow et al., 2011). Further randomised controlled trials are needed to confirm the above findings, particularly with Australian samples. In addition, this research has been largely based on MBSR programs, and there is a general lack of research regarding the possible benefits of other MBIs within this population.

A more recently developed and less known approach to mindfulness intervention is Mindfulness-integrated Cognitive Behaviour Therapy (MiCBT; Cayoun, 2011), which integrates traditionally-taught mindfulness training with core principles of CBT into a four-stage model. Hence, MiCBT may also be a helpful tool in equipping carers with effective coping strategies; however there has been no previous research investigating its benefits for family carers. This approach will be described in some detail below.

Mindfulness-integrated Cognitive Behaviour Therapy

Based on a model of reinforcement that highlights the simultaneous co-emergence of judgemental thoughts and coupled bodily sensations, Cayoun's (2011) model combines mindfulness training with some of the core principles of cognitive behavioural therapy (CBT) in a four-stage transdiagnostic approach, Mindfulness-integrated Cognitive Behaviour Therapy (MiCBT). MiCBT was specifically developed for clinical purposes and was designed to address a wide variety of conditions and the complexity of comorbidity. MiCBT also incorporates other

traditional Buddhist teaching skill sets, such as ethics and compassion, which are incorporated into the fourth stage to help prevent relapse. MiCBT can be flexibly delivered individually or in group format over a typical period spanning eight to twelve sessions. Table 1 outlines a brief description of each stage, including the methods and techniques used, and skills learned (see also Appendix C for detailed description).

Table 1

Description of the Four Stages of MiCBT with Methods Used and Skills Learned

Stage*	Brief Description
1. Personal	In the first stage, clients learn attention and emotion regulation skills through the practice of mindfulness meditation. By initially learning the technique of mindfulness of breath (See Cayoun, 2011, for script of instructions), clients learn to sustain attention to the breath, to inhibit the usual response to thoughts naturally emerging in awareness, and to shift attention back to the breath. Clients learn to develop meta-cognitive awareness by observing the process of thinking and its coupling effect on the body, and the impermanence of thoughts, as they arise and pass, without judging or identifying with the thoughts. Clients are then taught to pass their attention through the body systematically and perceive somatosensory experiences as neutrally as possible whilst inhibiting automatic responses.

Cayoun suggests that such neutral observation of both thoughts and coupled body sensations constitutes an exposure-and-response-prevention procedure to the internal context of experience. This method leads to a systematic desensitisation

to encountered internal experiences that previously may have resulted in maladaptive patterns of responses. In this way, MiCBT draws on the principles of exposure and desensitisation to help change habitual unhelpful internally generated reactions or coping strategies, such as ruminative thinking, anticipatory stress and avoidance of spontaneous traumatic memories. This stage is said to reduce one's overall habit of over-reacting emotionally and to prepare the nervous system for exposure tasks in the external environment.

2. Exposure

In the second stage, these desensitisation skills are incorporated in various exposure methods applied to address avoidance of external situations. These include the use of imagery and in-vivo procedure methods. The procedures are guided by a set of varied targets listed hierarchically as a function of subjective units of distress (SUDS). This stage provides an experiential basis for cognitive reappraisal and increases self-confidence to address complex interpersonal situations

3. Interpersonal

In the third stage, desensitisation and non-avoidance skills are combined and incorporated into interpersonal skills, including assertiveness training. Clients learn to divide non-judgemental attention between self and others for the purpose of facilitating interpersonal communication. They learn to decrease self-referential processing by considering others' emotional experiences and by not reacting to others' reactivity. Since the precipitating, reinforcing and maintaining factors of psychopathologies are frequently of interpersonal nature, Stage 3 is an important step towards relapse prevention in MiCBT. It also prepares the client for the development of more specific empathic skill.

4. Empathic

The fourth stage teaches empathic skills grounded in bodily experience and in genuine respect for ethical boundaries in daily actions. Participants learn to pay effortful attention to their motivations in daily actions and prevent harmful intentions and actions toward themselves and others. They also learn that they are the first recipients of the emotions they generate and learn to choose carefully which emotion to promote and which emotion to let go. This stage helps develop more harmonious relationships with others and enhances the prevention of relapse.

Note. Table adapted from Cayoun (2011); MiCBT is flexibly delivered across four stages; personal stage, exposure stage, interpersonal stage and empathic stage.

A preliminary investigation found that over the course of an 8-week MiCBT intervention, psychiatric in-patients diagnosed with a range of chronic psychological disorders reported statistically and clinically significant improvements across a number of symptom domains, including depression, anxiety, stress, hostility, interpersonal skills and somatic complaints (Cayoun, Sauvage, & van Impe, 2004). However, due to a lack of control condition in this study, it cannot be concluded that these effects occurred specifically as a result of the MiCBT program (Cayoun, 2011). Nevertheless, these findings revealed promising results for the effectiveness of MiCBT as a clinical intervention in reducing symptoms in various clinical populations with severe psychological conditions and complex comorbidity.

Similarly, a quasi-exploratory feasibility study found that a non-clinical sample of individuals with Type 2 diabetes receiving MiCBT reported greater reductions in psychological symptoms, and greater improvements in mindfulness-based self-efficacy, self-compassion, and diabetes related self-care, compared with

controls (Lindsay, 2007). Despite lacking experimental rigor, these findings indicate preliminary evidence for the effectiveness of MiCBT in improving mindfulness-based self-efficacy and reducing the severity of psychological symptoms in individuals without a diagnosed psychological condition.

However, despite promising findings to date, research regarding the efficacy of MiCBT as a therapeutic approach is in its infancy. Although studies investigating the efficacy of MiCBT in both clinical and non-clinical populations are currently being undertaken, empirical evidence to date is lacking, particularly in the area of non-clinical populations, such as carers.

The Present Study

Recognising the potential benefits of MiCBT, the Tasmanian branch of Carers Australia (Carers Tasmania) has offered a free 9-week MiCBT group intervention over the last 3 years to family carers in the local community. Through the use of self-report questionnaires, Counsellors from the organisation have observed that numerous carers have reported benefits from the skills learned through the MiCBT program. Benefits included a reduction in stress associated with the caring role and improvement in the general ability to be more aware of the present moment. However, no outcome study has ever been conducted to assess these claims. Accordingly, the current study aimed to investigate the effects of the group-based MiCBT program offered to carers through Carers Tasmania on their levels of distress and mindfulness-based self-efficacy (i.e., perception of their ability to cope using mindfulness skills).

Effects on carers.

On the basis of previous findings (e.g., Epstein-Lubow et al., 2011), and carers' quantitative reports conveyed by Carers Tasmania counsellors, it was hypothesised that family carers' receiving MiCBT would report significantly lower levels of anxiety, depression and stress, and significantly higher levels of mindfulness-based self-efficacy, at post-program than at pre-program. It was also expected that these benefits would be greater for carers receiving MiCBT than for carers receiving treatment as usual (TAU); that is, supportive counselling. Specifically, it was hypothesised that, compared to carers in the TAU group, carers in the MiCBT group would report a significantly greater reduction in depression, anxiety and perceived levels of stress, and significantly greater improvements in mindfulness self-efficacy skills, from pre-program to post-program.

Participants were also encouraged to continue practising mindfulness meditation beyond the completion of the program, as in other MBIs. Hence, it was also hypothesised on the basis of previous research findings (e.g., Klatt, Buckworth, & Malarkey, 2009; Whitesman, 2008; see Epstein-Lubow et al., 2011 for a review) that the benefits potentially observed on all dependent measures would be maintained at 1-month follow-up.

Effects on care recipients.

Some carers play a large role in the lives of their care recipients, which is likely to be crucial to the quality of life and experiences of the care receiver. Epstein-Lubow et al. (2011) found that after mindfulness training, carers reported an increased ability to accept their loved ones' situation 'as is' rather than as they wished it to be, and to comfortably 'be present with' their care recipients.

Carers Tasmania counsellors also noted that some care recipients noticed improvements in their relationship with their family carer. Since individuals undertaking the four stages of MiCBT also learn to improve the dynamics of interpersonal relationships, it was expected that carers receiving MiCBT would be less reactive when relating to their care recipient over the duration of the course. However, the extent to which care recipients would indirectly benefit from their carers' participation in the MiCBT program, without also actively participating themselves, has not been studied.

Therefore, the current study also aimed to investigate whether potential benefits reported by caregivers receiving MiCBT impacted positively on their relationship with their care recipients, from the care recipients' perspective; and whether this impact was greater than for those whose carer received TAU. Specifically, it was hypothesised that care recipients would report positive change in their relationship with their carer over the duration of the MiCBT program, and that those whose carer received MiCBT would report greater positive change than those whose carer received TAU.

Method

Participants

MiCBT.

Participants consisted of 39 family carers who participated in one of the MiCBT programs offered by Carers Tasmania over the last 3 years (from 2010 to 2012), and had consented to the release of their self-report data. As defined by Carers Tasmania (2010), family carers are people who provide unpaid care and support to family members, neighbours or friends who have a disability, mental illness, chronic condition, terminal illness or who are frail and aged. Participants were self-selected as they had previously actively sought help and counselling support from Carers Tasmania.

Two participants' data were excluded from analyses due to missing data. A further five were also excluded as data were only available for a 3-month follow up and not the 1-month follow up, due to administrative differences in the collection of data between groups. A total of 33 family carers (3 male, 30 female) ranging from 43;03 years to 82;11 years (mean age = 61;06 years, SD = 9;07 years) were eligible for inclusion in the final sample. Participation was voluntary, and all consenting participants were informed that they could withdraw their consent for participation at any time. Unfortunately, only one care recipient associated with a carer from the treatment group consented to participation in the study; hence, the findings of which will not be discussed here due to limited sample size.

Treatment as usual (TAU).

Due to difficulties with recruitment and encouraging the engagement of counsellors in the study, data were not gathered from family carers receiving non-

MiCBT counselling services (TAU). As a consequence, data were also unable to be gathered from care recipients of family carers receiving TAU.

Materials

Standardised measures.

To examine the efficacy of the MiCBT group program as provided by Carers Tasmania, the current study utilised standardised self-report measures of anxiety, depression, stress, and mindfulness self-efficacy routinely used by Carers Tasmania as a component of the MiCBT program. These included the short and long versions of the Depression, Anxiety and Stress Scale (DASS-21/DASS-42) (Lovibond, 1983; Lovibond & Lovibond, 1995a) and the Mindfulness-based Self Efficacy Scale-Revised (MSES-R: Cayoun, Francis, Kasselis, & Skilbeck, 2013).

DASS.

The DASS scales measure depressive, anxious and stress related symptoms, and are suitable for nonclinical populations. Perceived stress as measured by the DASS, is characterised by persistent tension, irritability, and frustration. Both the original 42-item scale developed by Lovibond (1983) and the revised 21-item short form scale developed by Lovibond and Lovibond (1995a; see also Lovibond & Lovibond, 1995b) were utilised. Example items include “*I found it hard to wind down*”, or “*I felt I wasn’t worth much as a person*”. Participants are required to rate how much the statement applied to them over the past week using a four-point Likert scale (0 = did not apply to me at all, to 3 = applied to me very much, or most of the time), yielding a scale score range of 0-126 for DASS-42, and 0-63 for DASS-21. Higher scores on the four-point scale indicate greater distress. The DASS scales have been shown to demonstrate excellent internal consistency and good discriminant and

convergent validity (Brown, Chorpita, Korotitsch & Barlow, 1997; Lovibond & Lovibond).

MSES-R.

The Mindfulness Self-Efficacy Scale-revised (MSES-R; Cayoun et al., 2013) is a 22-item self-report questionnaire that attempts to address the limitations of previous mindfulness questionnaires. Unlike previous scales which purported to measure Mindfulness as a construct, the MSES-R measures the sense of self-efficacy with skills that develop as a consequence of becoming more mindful. Self-efficacy relates to a person's perception or belief in their ability to perform certain skills (Cayoun et al.). In addition, the items were designed to reduce the impact of response shift bias produced by increased self-awareness after mindfulness training, a bias inherent in most other mindfulness scales (Grossman & van Dam, 2011). Hence, it can be used to measure skills arising from mindfulness-based practices before, during and after clinical interventions. In addition, the MSES-R was specifically designed to be appropriate for use within clinical populations and includes a measurement of equanimity, a principle often associated with the cultivation of mindfulness.

Participants are required to rate how much they agree with each statement 'right at this moment', on a five-point Likert scale ranging from, 0 = Not at all, to 4 = Completely. Example items include, "*When I feel very emotional, it takes a long time for it to pass*", or "*I avoid feeling my body when there is pain or other discomfort*". Reverse scoring is applied to specific items, yielding a total MSES-R score range of 0 to 88.

The MSES-R also comprises six subscales of self-efficacy, each reflecting coping skills that have been identified in the literature to improve with mindfulness. Subscales include Emotion Regulation (measuring the ability to regulate one's emotions), Equanimity (measuring the ability to normalise difficulties and prevent reactivity), Distress Tolerance (measuring the ability to inhibit avoidance of intolerance or discomfort), Social Skills (measuring social abilities in the broader sphere of interaction), Taking Responsibility (measuring clarity of interpersonal boundaries and locus of control), and Interpersonal Effectiveness (measuring the ability to connect with others within relationships). Scores can be computed for each subscale by summing the relevant item scores, with reverse scoring applied to specific items, yielding subscale scores ranging from 0-24 on the Emotion Regulation subscale, 0-16 on the Equanimity subscale, and 0-12 on the remaining subscales.

The MSES-R has been shown to be psychometrically acceptable for use with both clinical and non-clinical samples. In a study of 521 participants, Cayoun et al. (2013) reported high internal consistency (Cronbach alpha = .86), excellent test-retest reliability ($r = .88$), and correlations with the three subscales of the DASS-21, indicating good discriminant validity when discriminating between those with a mental illness, and those without. Correlations with the Five Facet Mindfulness Questionnaire scales (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) and the Mindfulness Attention Awareness Scale (Brown & Ryan, 2004) were also within good range indicating good convergent validity.

Care Recipient Questionnaire.

A short retrospective post-then-pre Questionnaire was designed by the researcher specifically for the current study to measure self-perceived changes in the quality of the carer-care recipient relationship over the duration of the program, from the perspective of the care recipient (see Appendix D). A post-then-pre design was used to reduce potential response-shift bias in care recipients' responses over time, and as a method of ethical convenience (i.e., to reduce the burden of participation for disabled care recipients). Participants are asked to reflect on their relationship with the carer over the duration of the MiCBT program and comment whether they had noticed any changes in the quality of the relationship. Questions consist of 10 items requiring care recipients to comment on whether certain aspects of their relationship with their carer were better, worse or the same at the end of the program than they were at the beginning of the program. Aspects of relationship include the carer's abilities to help their care recipient, to listen, to be attentive and spend time with them, how argumentative they were and carer stress. Questions also focus on the care recipients' perception of their overall quality of relationship with their carer.

Procedure

This study was approved by the Tasmanian Human Research Ethics Committee (see Appendix A). All family carers who completed one of the 9-week MiCBT group programs run by Carers Tasmania over the last 3 years were invited to participate in the study. Carers who had completed the program prior to August 2011 were sent an information sheet and a consent form which they were required to fill out and return to Carers Tasmania. Carers participating in one of the three groups conducted between August 2011 and September 2012 were invited to participate in

person by their counsellors and also provided written informed consent. Participation in the study did not require anything in addition to participation in the group program run by Carers Tasmania. By providing written consent, participants consented to the release of their scores on the self-report measures they completed during the MiCBT program as a course requirement (see Appendix B for information sheets and consent forms).

Carers were pre-selected for participation in the MiCBT program during a pre-course selection interview by counsellors. Counsellors judged each carer's suitability for participation on the basis of discussion between the counsellors and carer regarding the carer's readiness and commitment towards their involvement in the program. Participants were clearly informed of the nature of the program and the associated practice and time commitments involved.

As a component of the program run by Carers Tasmania, the DASS and MSES-R measures were administered to group participants at three time points; during the pre-course selection interview prior to commencement of the course (pre); again during the last group session in week nine (post); and 1 month following the completion of the program (1-month follow-up). Administration of self-report questionnaires was facilitated by group counsellors at both pre and post time points. Follow-up measures were posted to group participants 1 month after the completion of the course, who were then required to post their measures back to group counsellors. Hence, the current study implemented a simple within-subjects design, with participants completing multiple measures at each of the three time points.

MiCBT Intervention.

The intervention was a 9-week long group MiCBT program (Cayoun, 2011), which was offered by Carers Tasmania over a period of 3 years. As with MBSR and MBCT, the delivery of MiCBT requires commitment to a daily personal practice of mindfulness meditation. It is also repeatedly argued that therapists who are themselves trained in mindfulness practices are most effective in implementing mindfulness-based interventions (e.g., Cayoun, 2011; see also Dimidjian & Linehan, 2003). Hence, the program was taught by three trained counsellors employed by Carers Tasmania, who received appropriate MiCBT training and self-reported having since maintained personal daily mindfulness meditation practice. The program closely adhered to the MiCBT protocol document in the manual (Cayoun, 2009), with some exceptions as it was adapted to suit the specific needs of people caring for family members and friends on a non-paid basis.

The program consisted of nine two-hour weekly group sessions over a period of 9 weeks on the Carers Tasmania premises. All participants met as a group, and two instructors were present at all times. Each session involved the instruction of various mindfulness and Cognitive Behaviour Therapy (CBT) techniques, group practice and group discussions. Group discussions were facilitated in a safe and open environment where participants could share their experiences with the meditation.

The program incorporated the instruction for several mindfulness techniques and core principles of CBT, and participants were expected to practice mindfulness meditation techniques at home for 30 minutes twice daily, as outlined in the MiCBT protocol (see Cayoun, 2009) (see also MiCBT program summary in Appendix C). Unfortunately, actual adherence to daily mindfulness practice was not formally

measured in the current study. Each participant was provided with an audio CD to support home practice. Group participants were then invited to a follow up session held at least 1 month after the 9-week group program, which consisted of group practice, group discussion, goal achievement evaluation and self-report assessment.

Results

Nineteen of the 33 participants completed the DASS at all three time points. Sixteen of the same participants, in addition to three further participants ($N = 19$), had also completed the MSES-R at all three time points. Therefore, to determine whether potential changes in participants' self-reported levels of distress and mindfulness self-efficacy over the duration of the MiCBT program were maintained 1 month following completion of the program, analyses were conducted only on the participants completing each measure at all three time points.

Three participants reported having previously been diagnosed with, and affected at the time of participation in the program by a mental illness; including Post-traumatic Stress Disorder and Anxiety Disorder. However, data were screened for normality and outliers using graphical methods and statistical normality tests. Histograms of participants' scores on the two measures (DASS and MSES-R) were examined to ensure statistical assumptions were not violated and effects were not likely the product of outliers (see Appendix E). Kolmogorov-Smirnov tests of normality indicated non-significance for participants' responses on all scales and subscales ($p = .2$ for all), indicating assumptions of normality were not violated. For the clinical significance of effects, effect sizes were calculated using Cohen's d .

DASS

Mean scores of participants' ratings on the depression, anxiety and stress scales of the DASS at pre-program, post-program and 1-month follow-up, can be viewed in Table 2.

Table 2

Means and Standard Deviations for the Depression, Anxiety and Stress Scales

	Depression	Anxiety	Stress
Pre	14.53 (9.86)	10.47 (6.83)	20.63 (10.12)
Post	5.21 (5.93)	4.00 (3.32)	6.53 (5.10)
Follow-up	3.84 (4.75)	3.16 (3.86)	5.84 (4.99)
Community Norms	5.55 (7.48)	3.56 (5.39)	9.27 (8.04)

One-way Repeated Measures ANOVAs were conducted to compare participants' mean scores on the Depression, Anxiety and Stress subscales over the three time points. Greenhouse-Geisser corrections were applied due to violations of the assumption of sphericity on the Anxiety and Stress subscales. Greenhouse-Geisser corrections were also applied to the Depression subscale as per suggestion by Howell (2001). Main effects were found for Depression, $F(2, 29) = 17.02, p < .001$,

$\eta^2 = .486$, Anxiety, $F(1, 26) = 21.78$, $p < .001$, $\eta^2 = .548$, and Stress, $F(1, 26) = 41.85$, $p < .001$, $\eta^2 = .699$, showing a statistically significant decrease in participants' self-rated levels of distress over time. As shown in Table 3, very large effect sizes were found, indicating that the observed decrease in participants' self-rated levels of distress over time is also clinically meaningful.

Bonferroni-adjusted pairwise comparisons ($\alpha = .05$) further indicated that overall, participants self-reported significantly lower levels of depression, anxiety and stress at both post-program and 1-month follow-up, than at pre-program (see Table 3). This suggests that overall, participants' depressive, anxious and stress symptomatology significantly decreased over the 9 weeks duration of the MiCBT group program; the clinical significance of which is indicated by very large effect sizes. In addition, these lower levels were retained 1 month following the completion of the program, as indicated by the lack of statistically significant differences between post-program and 1-month follow-up on the three scales, and consistently large effect sizes between pre- and follow-up comparisons. Small effect sizes were also found between post-program and follow-up time points on the depression and anxiety scales, indicating clinically meaningful, albeit not statistically significant, decreases in carer's levels of depression and anxiety beyond the program (see Table 3).

Table 3

Pairwise Comparisons of Mean DASS Scores Across Pre-program, Post-program and Follow-up

DASS	Mean Difference	95% CI	d
Depression			
<i>Pre – Post</i>	9.32**	[3.35, 15.28]	1.18
<i>Pre – Follow-up</i>	10.68***	[4.95, 16.42]	1.46
<i>Post – Follow-up</i>	1.37	[-2.45, 5.18]	0.26
Anxiety			
<i>Pre – Post</i>	6.47***	[2.53, 10.42]	1.28
<i>Pre – Follow-up</i>	7.32***	[4.09, 10.55]	1.37
<i>Post – Follow-up</i>	.84	[-1.33, 3.02]	0.23
Stress			
<i>Pre – Post</i>	14.11***	[8.14, 20.07]	1.85
<i>Pre – Follow-up</i>	14.79***	[10.07, 19.51]	1.96
<i>Post – Follow-up</i>	.68	[-2.74, 4.11]	0.14

Note. CI = Confidence Interval.

* $p \leq .05$, ** $p \leq .01$, & *** $p \leq .001$ following Bonferroni adjustment.

Reliable and clinically significant change.

Reliable change indices were used to assess changes in participants' mean scores on the DASS subscales across the three time points. Table 4 shows that statistically significant decreases in participants' self-rated levels of depression, stress and anxiety across the duration of the program, and from pre-program to 1-month follow-up, were found to reflect clinically reliable change. However,

differences in mean scores from post-program to 1-month follow-up were not found to reflect clinically reliable and meaningful change.

Table 4

Reliable Change Index Scores for Self-Reported Changes in Depression, Anxiety and Stress Scores on the DASS

	Pre-Program to Post-Program	Pre-Program to 1- month Follow-up	Post-Program to 1- month Follow-up
Depression	-2.54*	-2.92*	-.37
Anxiety	-2.00*	-2.26*	-.26
Stress	-3.92*	-4.11*	-.19

Note. * denotes clinically meaningful and significant reliable change ($\alpha = .05$).

Diagnostic Classification of DASS Ratings.

According to the recommended diagnostic guidelines (Lovibond & Lovibond 1995b), overall, participants' self-rated levels of depression, anxiety and stress shifted from the 'Moderate' severity range at pre-program, to the 'Normal' range at post-program. Scores generally remained in the 'Normal' range at the 1-month follow-up, further indicating that these clinical benefits were maintained 1 month following completion of the program. Table 5 outlines the range of severity of participants' self-reported levels of depression, anxiety and stress over the three time points.

Table 5

Number of Participants Self-reporting within each Category of Severity According to the Recommended Diagnostic Guidelines for Depression, Anxiety and Stress over the Three Time Points

	Normal	Mild	Moderate	Severe	Extremely Severe
Depression					
<i>Pre</i>	5	3	5	4	2
<i>Post</i>	16	1	1	1	0
<i>Follow-up</i>	17	1	1	0	0
Anxiety					
<i>Pre</i>	4	4	7	3	1
<i>Post</i>	14	2	3	0	0
<i>Follow-up</i>	15	1	3	0	0
Stress					
<i>Pre</i>	6	2	3	6	2
<i>Post</i>	17	1	1	0	0
<i>Follow-up</i>	17	2	0	0	0

Comparison with Community Norms.

Further analyses were then conducted to compare participants' self-rated levels of depression, anxiety and stress at pre-program, with community norms reported by Crawford and Henry (2003) gathered from 1771 (965 females, 806 males) individuals ranging from 15 to 91 years of age (Mean = 40.9 years, SD = 15.9). One-sample t-tests revealed that participants' pre-program mean scores of depression, $t(18) = 3.97, p = .001, d = 3.05$, anxiety, $t(18) = 4.42, p < .001, d = 2.80$, and stress, $t(18) = 4.89, p < .001, d = 3.77$, were significantly higher than community norms (see Table 2 for means), confirming observations using the recommended diagnostic guidelines. Consistently large effect sizes also indicate that the observed differences between community norms and participants' self-rated levels of depression, anxiety and stress at pre-program were clinically meaningful.

One-sample t-tests also showed that participants' post-program mean scores of depression, $t(18) = -.25, p = .81, d = -.15$, and anxiety, $t(18) = .58, p = .57, d = .02$, did not significantly differ from community norms, indicating that over the duration of the program, levels of depression and anxiety approached community norms. In addition, it was found that participants' mean score of stress at post-program was significantly lower than community norms, $t(18) = -2.34, p = .03, d = -1.07$, with a large effect size, adding further support for a significant and clinically meaningful decrease in participants' stress levels over the duration of the program.

MSES-R

Mean scores of participants' ratings on the MSES-R subscales at pre-program, post-program and 1-month follow-up, can be viewed in Table 6.

Table 6

Means and Standard Deviations for MSES-R Total Score and Subscales Scores

	Pre-Program	Post- Program	Follow-up	Community Norms
Emotion Regulation	10.95 (5.58)	16.84 (3.34)	18.11 (4.90)	15.27 -
Equanimity	9.42 (3.10)	11.79 (2.78)	11.68 (2.81)	10.33 -
Distress Tolerance	6.37 (2.34)	8.42 (2.46)	8.89 (1.97)	8.36 -
Social Skills	6.32 (1.70)	7.47 (1.71)	7.74 (1.56)	8.34 -
Taking Responsibility	6.00 (2.24)	8.63 (1.95)	8.32 (2.26)	8.30 -
Interpersonal Effectiveness	8.00 (1.63)	8.21 (2.04)	8.26 (2.05)	9.35 -
MSES-R Total Score	47.05 (9.65)	61.16 (8.71)	63.00 (10.93)	59.96 (13.56)

Note. Standard deviations for the community norms of each subscale were not available.

Even though the assumption of sphericity was violated on the Equanimity and Distress Tolerance scales only, Greenhouse-Geisser corrections were applied to all analyses as per suggestion by Howell (2001). One-way Repeated Measures

ANOVAs revealed main affects for Equanimity, Emotion Regulation, Social Skills, Distress Tolerance and Taking Responsibility subscales (see Table 7). However, contrary to expectations, there was no main effect of Interpersonal Effectiveness indicating that participants' perceived levels of interpersonal effectiveness did not differ significantly across the duration of the program, or during the 1-month follow-up period.

Table 7

Main Effects for MSES-R Total and Subscale Scores

MSES-R	<i>F</i>	<i>df</i>	η^2
Emotional Regulation	31.14***	(2, 28)	.63
Equanimity	7.04**	(2, 27)	.28
Distress Tolerance	10.80***	(2, 27)	.38
Social Skills	5.36*	(2, 34)	.23
Taking Responsibility	22.22***	(2, 34)	.55
Interpersonal Skills	.12	(2, 33)	.01
MSES-R Total Score	35.12***	(2, 30)	.66

Note. * $p \leq .05$, ** $p \leq .01$, & *** $p \leq .001$, following Greenhouse-Geisser corrections.

Bonferroni-adjusted pairwise comparisons ($\alpha = .05$) were then conducted to further explore significant differences across time points (see Table 8). It was found that participants reported significantly higher levels of mindfulness-based self-efficacy following the completion of the MiCBT group program than at pre-program, and that these higher levels were maintained 1 month following the completion of the

program. Large effects sizes were also observed, indicating that the increase in participants' perceived levels of Emotional Regulation skill over time were clinically meaningful (see Table 8).

Also shown in Table 8, it was also found that participants reported significantly higher scores at post-program than at pre-program on the Emotion Regulation, Equanimity, Distress Tolerance, Social Skills, and Taking Responsibility subscales, with large effect sizes. This indicates that the observed increases in participants' ratings from pre-program to post-program on these subscales were both statistically significant and clinically meaningful; hence, suggesting that participants perceived an increase in these skills over the duration of the program. Similarly, participants' scores were also significantly higher at follow-up than at pre-program on these scales, apart from the Equanimity subscale ($p = .55$) on which a trend for improvement was observed with an effect size in the high end of the moderate range.

In addition, no significant differences were observed between scores at post-program and 1-month follow-up on any of the subscales or the MSES-R total score ($p > .05$ in all cases). However, a trend for further improvement was observed on the Emotion Regulation Scale ($p = .07$), with a small effect size indicating that observed differences beyond the duration of the program at 1-month follow-up may be clinical meaningful. Overall, these findings indicate that participants' perceptions of their mindfulness-based self-efficacy, emotion regulation abilities, equanimity, distress tolerance, social skills and ability to take responsibility increased significantly over the duration of the MiCBT group program, and were at least maintained 1 month following the completion of the program; and that these increases were clinically meaningful.

Table 8

Pairwise Comparisons of Mean MSES Total and Subscale Scores across Pre-program, Post-program and Follow-up

MSES-R	Mean Difference	95% CI	d
Emotion Regulation			
<i>Pre – Post</i>	-5.90***	[-8.80, -2.99]	-1.32
<i>Pre – Follow-up</i>	-7.16***	[-10.00, -4.32]	-1.37
<i>Post – Follow-up</i>	-1.26	[-3.02, .49]	-.31
Equanimity			
<i>Pre – Post</i>	-2.37*	[-4.24, -.50]	-.81
<i>Pre – Follow-up</i>	-2.26	[-4.56, .04]	-.77
<i>Post – Follow-up</i>	0.11	[-1.25, 1.46]	-.04
Distress Tolerance			
<i>Pre – Post</i>	-2.05*	[-3.83, -.28]	-.87
<i>Pre – Follow-up</i>	-2.53**	[-4.22, -.83]	-1.17
<i>Post – Follow-up</i>	-.47	[-1.45, .50]	-.11
Social Skills			
<i>Pre – Post</i>	-1.16*	[-2.30, -.01]	-.68
<i>Pre – Follow-up</i>	-1.42*	[-2.80, -.05]	-.87
<i>Post – Follow-up</i>	-.26	[-1.38, .86]	-.16
Taking Responsibility			
<i>Pre – Post</i>	-2.63***	[-3.81, -1.45]	-1.26
<i>Pre – Follow-up</i>	-2.32***	[-3.54, -1.09]	-1.03
<i>Post – Follow-up</i>	.32	[-.67, -1.31]	-.15

Interpersonal
Effectiveness

<i>Pre – Post</i>	-.21	[-1.50, 1.08]	-.11
<i>Pre – Follow-up</i>	-.26	[-1.80, 1.27]	-.14
<i>Post – Follow-up</i>	-.05	[-1.78, 1.67]	-.03

MSES-R Total Score

<i>Pre – Post</i>	-14.11***	[-19.99, -8.23]	-1.54
<i>Pre – Follow-up</i>	-15.95***	[-22.20, -9.70]	-1.55
<i>Post – Follow-up</i>	-1.84	[-5.96, 2.28]	-.19

Note. CI = Confidence Interval.

* $p \leq .05$, ** $p \leq .01$, & *** $p \leq .001$, following Bonferroni adjustment.

Reliable and clinically significant change.

Reliable change indices revealed that statistically significant improvements observed from pre-program to post-program and through to 1-month follow-up, in participants' MSES-R total and emotion regulation mean scores, were found to reflect clinically reliable and meaningful change (see Table 9). Clinically reliable change was also observed from pre-program to 1-month follow-up in participants' mean scores on the distress tolerance subscale. However, differences in participants' self-reported scores on this subscale from pre-program to post-program were not found to reflect clinically reliable change. Differences in group mean scores on all other subscales (Equanimity, Social Skills, Taking Responsibility, and Interpersonal Effectiveness) across the three time points were also not found to reflect clinically reliable change.

Table 9

Reliable Change Index Scores for Self-Reported Changes in Total Scale and Subscale Scores on the MSES-R

	Pre-program to Post-program	Pre-program to 1- month Follow-up	Post-program to 1-month Follow-up
Emotion Regulation	2.00*	2.42*	.43
Equanimity	1.34	1.28	.06
Distress Tolerance	1.72	2.11*	.40
Social Skills	0.77	0.94	.17
Taking Responsibility	1.36	1.58	-.22
Interpersonal Effectiveness	0.16	0.21	.04
MSES-R Total	2.66*	3.01*	.35

Note. * denotes clinically meaningful and significant reliable change ($\alpha = .05$).

Comparison with Community Norms.

One-sample t-tests were then conducted to compare participants' self-rated scores on the MSES-R and each subscale at both pre- and post-program with community norms (Cayoun, 2013) (see Table 6 for means). Norms consisted of self-report data collected electronically from 476 individuals; 329 females (mean age = 43;2 years) and 147 males (mean age = 44;6 years).

Table 10

*Tests for Differences between MSES-R Total and Subscale Scores and Community**Norm Means*

MSES-R Subscale	<i>t</i>	<i>df</i>	95% <i>CI</i>	<i>d</i>
Emotional Regulation				
<i>Pre</i>	-3.38**	18	[-7.01, -1.63]	-
<i>Post</i>	2.05	18	[-.04, 3.18]	-
Equanimity				
<i>Pre</i>	-1.28	18	[-2.40, .58]	-
<i>Post</i>	2.29*	18	[.12, 2.80]	-
Distress Tolerance				
<i>Pre</i>	-3.68**	18	[-3.10, -.84]	-
<i>Post</i>	.14	18	[-1.10, 1.27]	-
Social Skills				
<i>Pre</i>	-5.24***	18	[-2.86, 1.22]	-
<i>Post</i>	-2.26*	18	[-1.71, -.06]	-
Taking Responsibility				
<i>Pre</i>	-4.48***	18	[-3.38, -1.22]	-
<i>Post</i>	.74	18	[-.61, 1.27]	-

Interpersonal
Effectiveness

<i>Pre</i>	-3.60**	18	[-2.14, -.56]	-
<i>Post</i>	-2.43*	18	[-2.12, -.15]	-

MSES-R Total

<i>Pre</i>	-.53***	18	[-17.56, -8.26]	-3.79
<i>Post</i>	.60	18	[-3.00, 5.39]	0.39

Note. * $p \leq .05$, ** $p \leq .01$, & *** $p \leq .001$.

Table 10 above illustrates that participants' pre-program MSES-R total mean score was found to be significantly lower than community norms, with a very large effect size, suggesting a significantly lower level of mindfulness-based self-efficacy overall in the sample at pre-program compared with community norms. In contrast, participants' MSES-R total mean score at post-program was not found to differ significantly from community norms. In addition, a small to medium effect size suggests a trend towards significantly higher participant ratings at post-program compared with community norms. These findings add further support for an improvement in participants' perception of their mindfulness self-efficacy over the program.

It was also found that participants' pre-program mean scores on the Emotion Regulation, Distress Tolerance, Social Skills, Taking Responsibility, and Interpersonal Effectiveness subscales were significantly lower than community norms. Although participants' mean scores on the Social Skills and Interpersonal

Effectiveness subscales remained significantly below community norms at post-program, mean scores on the other subscales at post-program did not differ from community norms ($p > .05$). This adds further support for an improvement in participants' abilities to tolerate distress, take responsibility and regulate their emotions over the duration of the program.

In contrast, participants' pre-program mean score on the Equanimity subscale did not differ significantly from community norms. In addition, participants' post-program mean score on the Equanimity scale was significantly higher than community norms (see Table 10). These findings indicate that participants reported similar levels of equanimity at pre-program to community norms, and add further support to suggest that participants' perception of their ability to be equanimous improved over the duration of the program.

Correlations

Pearson Product-Moment Correlations were then conducted to investigate potential relationships between levels of distress and mindfulness self-efficacy. Correlations were conducted on the 16 participants who completed both measures at pre-program (Table 11) and post-program (Table 12).

Tables 11 and 12 below illustrate that strong significant negative relationships were found between self-reported levels of stress and Mindfulness-based Self-Efficacy at both pre- and post-program. Therefore, as expected, higher levels of stress as reported by carers at were associated with lower levels of mindfulness-based self-efficacy, at both pre- and post- program.

Table 11

Pearson Product-Moment Correlations between Participants' Psychological Wellbeing and Mindfulness-Related Skills at Pre-Program

	1	2	3	4	5	6	7	8	9	10
1 MSES-R Total	1									
2 Emotional Regulation	.75**	1								
3 Equanimity	.55*	.25	1							
4 Social Skills	.62*	.10	.26	1						
5 Distress Tolerance	.38	-.07	-.01	.56*	1					
6 Taking Responsibility	.46	-.34	-.10	.25	.09	1				
7 Interpersonal Effectiveness	.49	-.03	.34	.64**	.34	.17	1			
8 Anxiety	-.44	-.21	-.39	-.20	-.36	-.25	-.14	1		
9 Depression	-.39	-.36	-.24	-.02	-.25	-.27	.08	.50*	1	
10 Stress	-.67**	-.50*	-.37	-.18	-.30	-.66**	-.10	.71**	.55*	1

Note. * $p \leq .05$, ** $p \leq .01$, & *** $p \leq .001$.

Table 12

Pearson Product-Moment Correlations between Participants' Psychological Wellbeing and Mindfulness-Related Skills at Post-Program

	1	2	3	4	5	6	7	8	9	10
1 MSES-R Total	1									
2 Emotional Regulation	.81**	1								
3 Equanimity	.65**	.48	1							
4 Social Skills	.16	.14	-.28	1						
5 Distress Tolerance	.72**	.41	.30	.08	1					
6 Taking Responsibility	.74**	.74**	.50*	-.01	.21	1				
7 Interpersonal Effectiveness	.16	-.20	-.17	-.10	.33	-.01	1			
8 Anxiety	-.32	-.25	-.72**	.37	-.16	-.26	.34	1		
9 Depression	-.45	-.32	-.57*	.02	-.39	-.23	.46	.62*	1	
10 Stress	-.50*	-.41	-.37	-.38	-.41	-.26	.22	.25	.62*	1

Note. * $p \leq .05$, ** $p \leq .01$, & *** $p \leq .001$.

Similarly, strong significant negative relationships were also found between stress and ratings on the Emotional Regulation and Taking Responsibility subscales

at pre-program; albeit not at post-program. In contrast however, levels of stress were not found to correlate significantly with ratings on the Emotional Regulation and Taking Responsibility subscales at post-program.

In addition, levels of anxiety and depression were not found to significantly correlate with mindfulness-based self-efficacy at either pre- or post-program; nor with other mindfulness-related skills at pre-program. However, strong significant negative relationships were found between self-reported levels of depression and anxiety, and ratings on the Equanimity subscale at post-program; indicating that after the completion of the MiCBT program higher levels of depression and anxiety were associated with lower levels of equanimity.

Discussion

The main aim of the current study was to investigate the effects of the group-based MiCBT program offered through Carers Tasmania on family carers' levels of distress and mindfulness-related skills. Initially, there were also three additional aims of the current study. Firstly, to examine whether the potential benefits derived from the programme would be greater for carers receiving MiCBT than for carers receiving treatment as usual (TAU). Secondly, to examine whether care recipients would indirectly experience benefits in their relationship with their family carer through their carers' participation in the MiCBT program. And lastly, to examine whether such benefits would be greater for care recipients whose carer received MiCBT than for care recipients whose carer received TAU. However, due to recruitment issues and difficulties engaging the participation of TAU counsellors, the current study did not involve a care recipient participant group, nor did it involve an

active control group. Therefore, only the main aim of the current study was carried out.

DASS

Consistent with the main hypothesis, participants tended to self-report significantly lower levels of depression, anxiety and stress symptoms at the completion of the MiCBT program than they did at the commencement of the program. Further, no significant differences between self-reported levels of depression, anxiety or stress from post-program to 1-month follow-up were observed, suggesting that these benefits were maintained 1 month following the completion of the program. These findings are consistent with the findings of Cayoun et al. (2004) who report comparable evidence for the effectiveness of MiCBT in reducing clinical symptoms in a psychiatric sample with severe and varied clinical conditions. The current findings are also consistent with the broader literature indicating support for the effectiveness of mindfulness-based interventions in reducing psychological symptoms and improving psychological well-being amongst non-clinical populations (Escuriex & Labbé, 2011), such as other caregivers (e.g., Epstein-Lubow et al., 2011; Martin-Asuero & Garcia-Banda, 2010).

Reliable change indexes confirmed that reductions in the severity of self-reported depression, anxiety and stress across the duration of the program, and over the 1-month follow-up period, were clinically meaningful and reliable. Also consistent with statistical findings, no clinically meaningful and reliable change was observed from post-program to 1-month follow-up confirming that these benefits were maintained over time.

Adding further support to the observation of such a relationship, participants' self-reported levels of depression, anxiety and stress decreased from 'Moderate' levels (percentile range = 87-95) at pre-program to 'Normal' levels (percentile range = 0-78) at both post-program and 1-month follow-up. Only one participant reported higher levels of depression, stress and anxiety at post-program, according to the recommended diagnostic guidelines (Crawford & Henry, 2003), than at pre-program. However, as qualitative measures were not employed in the current study to gather data on circumstantial factors that may impact on participants' levels of distress, it is difficult to determine why this was the case. Future studies could employ the use of both quantitative and qualitative measures to gather data on significant life changes over the duration of the program to assist with ruling out the effects of such possible factors on participants' levels of distress.

Norms comparisons

Although not hypothesised, the current study also found that overall, participants' self-reported levels of depression, anxiety and stress at pre-program were significantly elevated compared with community norms. Therefore, although sampled from a community population the participant sample did not initially reflect a community profile. This is consistent with the findings of previous studies reporting high levels of depression, anxiety and stress amongst caregivers (see Epstein-Lubow et al., 2011; Klatt, Buckworth & Malarkey, 2009), and understandable given the inherent stresses and physical and psychological demands involved in care-giving. Moreover, given that the current participant sample consisted of individuals who give caring support in an unpaid, voluntary capacity, participants may have been less trained or equipped to deal with the stresses inherent

in care-giving, and therefore more at risk of emotional exhaustion and burnout (Klatt, Buckworth & Malarkey) than other people in the general community.

These findings also confirm those of previous studies highlighting the association between family care-giving in particular, and significant stress (e.g., Epstein-Lubow et al., 2011), and further suggest support for an association between family care-giving and heightened levels of anxiety and depression. This is consistent with suggestions by Klatt, Buckworth and Malarkey (2009), highlighting the relationship between the chronic stress inherent in caring for those with mental, physical or intellectual disabilities, or the frail elderly, and the development of psychiatric symptoms.

In addition, participants' significantly elevated pre-program levels of depression and anxiety were observed to approach community norms by post-program. Similarly, participants' levels of stress were observed to be significantly lower than community norms at post-program, compared with significantly elevated levels of stress at pre-program. Hence, these findings add further support for the observed reduction in levels of depression, anxiety and stress from pre- to post-program, implying an overall improvement in participants' levels of distress over the duration of the program. Overall, these findings demonstrate a real need for support that is helpful to family carers within the community, in reducing their levels of perceived distress.

MSES-R

Also consistent with the first hypothesis, participants' tended to report significantly greater levels of mindfulness-based self-efficacy at both post-program and 1-month follow-up, than at pre-program. Reliable Change Indexes also

confirmed that these differences reflected clinically meaningful and reliable change. Also, as expected, no significant or clinically reliable change was found between participants' self-rating of mindfulness self-efficacy at post-program and the 1-month follow-up period. These findings suggest that participants' perceived a significant improvement in their ability to use skills that typically develop through mindfulness training over the duration of the program, which was then maintained during the 1-month follow-up period. This is consistent with expectations based on the findings of previous studies (e.g., Carmody & Baer, 2008; Keune & Forintos, 2010) which highlight a relationship between engagement in mindfulness practice and an increased ability to cultivate mindfulness. Overall, these findings provide preliminary evidence that participation in the MiCBT program specifically may improve skills important in cultivating mindfulness amongst family carers.

Also as expected, participants additionally reported significant improvements from pre-program to post-program in a range of self-efficacy skills typically developed through mindfulness training; including emotion regulation, social skills, equanimity, distress tolerance, and taking responsibility. Participants also tended to report significant improvements in these skills from pre-program to 1-month follow-up, with the exception of equanimity. However, no significant differences were found from post-program to 1-month follow-up on any of the MSES-R subscales, indicating that participants' perceived improvements in their ability to use these mindfulness-related skills over the duration of the program were maintained 1 month following completion of the program. Hence, it is possibly due a potential lack of power in the current study that a significant improvement in carers' perceived levels of equanimity skills was not observed between pre-program and 1-month follow-up.

Future research is therefore needed to clarify whether the MiCBT group program leads to a general improvement in carers' perceived levels of equanimity skills over time, by utilising a larger sample size to improve statistical power. The effectiveness of the MiCBT in improving perceived equanimity skills in specific carer populations (i.e., carers of patients with terminal illness, or female/male carers etc.) may also be a warranted area of further investigation.

Contrary to expectations, however, participants did not report a significant improvement in interpersonal effectiveness over the duration of the program. Given the nature of care-giving, it might be expected that family carers would possess higher levels of interpersonal effectiveness than the general community. In contrast however, self-reported levels of interpersonal effectiveness were found to be significantly lower than community norms at both pre- and post-program. Hence, it seems that carers in this sample had sustained difficulties feeling interpersonally skilful both at the commencement and completion of the program.

It is possible that the lack of improvement in perceived interpersonal skill of carers may be due to the very nature and demands of caring for individuals with a disability, chronic condition or illness. That is, care recipients, whose condition is likely to be chronic and deteriorating, may not have been able to provide sufficient positive feedback to their carer to reinforce their role and interpersonal efforts. Accordingly, without such feedback, a carer's sense of self-efficacy in relating to others, especially their care recipient may not easily improve over the duration of such a short program.

However, given that the current study did not gather information regarding carers' experiences within their caring role or their relationship with their care

recipient over the duration of the program, the possible impact of such factors on this finding could not be determined. Such information may provide a better understanding for this observed lack of change, particularly so given that both pre- and post-program ratings of interpersonal effectiveness were found to be below those of community norms. Future studies may pay special attention to this particular difficulty with interpersonal effectiveness, and its long-term consequences in family carers.

Alternatively, two further reasons are proposed as possible explanations. Firstly, as the current study relied solely on self-report measures, it may be the case that participants' self-reported levels of interpersonal effectiveness may not be representative of their actual ability. Secondly, one learns to cultivate mindfulness through the practice of mindfulness techniques early on in the MiCBT program, whereas explicit instruction on how to apply mindfulness-related skills to relationships with others does not occur until stages three and four. Hence, skills such as emotion regulation, distress tolerance and equanimity may develop much earlier on in the program than the ability to connect with others in relationship (interpersonal effectiveness). As a result, it may have been more difficult for participants to perceive change in interpersonal effectiveness skills, than in other mindfulness-related skills, as they theoretically had less time to develop these skills. Future studies may lengthen the program duration to increase the duration of Stages 3 and 4, during which clients learn skills particularly relevant to the caring role. Such studies would be able to clarify whether a MiCBT intervention over a longer period than 9 weeks would be helpful in improving carers' self-efficacy in interpersonal skills.

Adding validity to the obtained statistical findings, reported improvements in emotion regulation across the duration of the program and through to 1-month follow-up, were also found to reflect clinically meaningful and reliable change. Given that the current study also observed significant reductions in participants' self-rated levels of depression, stress and anxiety over the duration of the program, which were maintained over the follow-up period, it is understandable that participants' sense of self-efficacy in managing their emotions also improved.

However, contrary to this suggestion, no significant correlations were observed between self-reported emotion regulation skills and levels of depression, anxiety or stress, at either pre- or post-program. Given that the current study employed a small sample size, it is possible that the correlational analysis was underpowered to detect possible significant relationships. Hence further research is needed to investigate whether participation in a MiCBT program may improve emotion regulation skills amongst family carers.

In addition, significant improvements in participants' self-reported levels of distress tolerance from pre-program to 1-month follow-up were also found to reflect clinically meaningful and reliable change. However, improvements from pre-program to post-program on this subscale were not found to reflect clinically meaningful or reliable change. This finding suggests a possible trend for improvement in distress tolerance 1 month following the completion of the program. Given this, it is possible that carers may have needed more time than the 9 weeks of the program for their distress tolerance skills to improve, or for carers to perceive such an improvement. It is also possible that the current study may have been underpowered to detect potential significance from pre- to post-program, due to the small sample size.

Furthermore, significant improvements in participants' levels of equanimity, taking responsibility, and social skills over the duration of the program were not found to be clinically meaningful or reliable, suggesting that some caution must be taken in interpreting these findings. Nevertheless, moderate to large effects sizes were found for these statistical improvements, providing support for the effectiveness of the 9-week MiCBT program in improving carers' self-efficacy in these mindfulness-related skills. Given the likelihood of reduced power in the current study to detect potentially significant and meaningful change, further investigation of the effectiveness of the group MiCBT program in improving carers' perceived levels of these mindfulness-related skills is needed, utilising larger sample sizes.

In addition, an absence of significant and clinically meaningful and reliable change was also observed for each mindfulness-related skill after the completion of the program (i.e., during the follow-up period). Therefore, as hypothesised, benefits reported as a result of the skills carers had learned during the program were maintained for at least 1 month following the completion of the study.

Norm comparisons

In addition, the current participant sample did not seem to closely reflect a community profile in relation to mindfulness-based self-efficacy (i.e., perception/own belief of one's ability to be mindful), or in relation to a range of skills assumed to be important in the cultivation of mindfulness. Specifically, participants' self-reported levels of mindfulness-based self-efficacy, emotion regulation, distress tolerance, social skills, taking responsibility and interpersonal effectiveness at pre-program were found to be significantly lower than community norms. Given the chronic demands of care-giving on a carers' time and personal

resources, it is understandable that participants' perception of their ability to be mindful would be low, particularly when feeling stressed or concerned about a close family member.

Although self-reported levels of social skills and interpersonal effectiveness remained significantly below community norms at post-program, levels of mindfulness-based self-efficacy, emotional regulation, distress tolerance and taking responsibility were comparable with community norms at post-program. Despite this, carers' perceived levels of social skills were found to significantly improve over and beyond the duration of the program. Interestingly however, carers' perceived levels of interpersonal effectiveness were not found to improve over the duration of the program.

With the limitations of the current study, it is unclear as to why levels of interpersonal effectiveness were not observed to improve over the program for carers. Indeed, it is possible that the MiCBT program was not effective in addressing and improving this particular mindfulness-related skill in this sample of carers. Alternatively, as previously discussed, it may be that since interpersonal skills are addressed later on in the program than the other mindfulness-related skills, that there was not enough time for carers to perceive improvement in their interpersonal skills. However, given the significantly low level of observed power in the relevant analysis of the current study for this subscale, it is also possible that the current study was not sufficiently powered to detect perceived changes in this skill over time. Hence, although these findings overall add further support for an improvement in participants' perception of their mindfulness-based self-efficacy, and their abilities to tolerate distress, take responsibility and regulate their emotions over the duration of the program, further research is needed around carers' interpersonal effectiveness

skills. In light of the discussion above, research utilising larger sample sizes and longer treatment (i.e., longer than 9 weeks) programs are recommended to validate the current findings and to further investigate whether MiCBT leads to an improvement carers' interpersonal effectiveness.

In contrast, participants' self-reported level of equanimity at pre-program was not found to differ significantly from community norms, indicating that generally, participants' perceived ability to be equanimous at pre-program reflected that of the general population. Indeed, the need to be non-judgemental and non-reactively accepting of experiences as they unfold (Brantly, 2005; Brown and Ryan, 2003) would be an important and inherently needed quality in care-giving. In addition, participants' levels of equanimity at post-program were found to be significantly higher than community norms, adding further support for the observed improvement in participants' self-rated ability to be equanimous over the duration of the program.

Unfortunately, the current study did not investigate why carers' perceived levels of equanimity skills did not differ from community norms when their perceptions of their other mindfulness-related self-efficacy skills were significantly lower than community norms. It is possible that carers rated their levels of equanimity higher because they value this skill to be inherent within the nature of care-giving, and therefore feel that this reflects a good carer characteristic. Alternatively, it may reflect an actual skill level as a general characteristic of the current sample. Specifically, carers in the current sample had all previously received some form of counselling support in which they would have developed the ability to reflect over situations and come to an acceptance of them without judgement. Unfortunately, as the current study only included two self-report measures, it is unclear as to whether this finding reflects actual skill level, or perceived skill level.

Hence, further research is also needed to substantiate and validate the obtained findings. Such research should utilise a range of additional measures, including care recipients' perceptions of their carers' ability to be equanimous, and may consider investigating potential differences in equanimity skills between carers who have received previous counselling support, and those who have not.

Correlations

Although not hypothesised, the current study also found that participants' self-reported levels of stress were strongly and negatively associated with their mindfulness-based self-efficacy skills at both pre- and post-program. This indicates that higher stress levels were associated with lower perceived mindfulness ability amongst family carers prior to MiCBT intervention, and that this relationship did not change over the duration of the program.

Similarly, strong negative relationships were also found between participants' levels of stress and perceived ability to regulate their emotions and take responsibility at pre-program. Interestingly, however, this was not the case at post-program, suggesting that there was a change in this relationship over the duration of the program.

In addition, self-reported levels of depression and anxiety were found to be strongly and negatively associated with equanimity at post-program, indicating that lower levels of depression and anxiety were associated with a greater perceived ability to be equanimous. In contrast, such a relationship was not observed at pre-program. Due to the nature of the program, it is possible that participants' understanding of equanimity may have improved over the program, and therefore their tendency to report their ability to be equanimous, may have changed; thereby

offering a possible explanation for the emergence of a relationship between participants' levels of distress and their ability to be equanimous, over the duration of the program.

However, participants' levels of depression and anxiety were not found to be significantly related to any other mindfulness-related skills at either pre- or post-program. Therefore an alternative, and equally as likely, explanation for the current findings may be that given the small sample size ($N = 16$), the correlational analysis in the current study may have been underpowered, making the detection of possible significant relationships difficult. Hence, future research is needed to further clarify relationships between levels of distress and mindfulness-related skills amongst family carers participating in a MiCBT intervention. Such research should utilise a much larger sample size to increase statistical power to detect possible relationships between psychological wellbeing and mindfulness-related skills.

Limitations

The findings of the current study are limited by several constraints. The major limitation is the lack of a control group or condition. Hence, possible effects of confounding factors, such as participants receiving attention by compassionate mindfulness teachers, on the observed findings could not be controlled. Furthermore, the group setting provides participants with the ability to reflect over their caring role and experiences with other family carers in similar circumstances, thereby normalising and reappraising their own difficulties. Also, the group setting provides a context for feeling supported by other participants, who may have also been able to be attentive, open and compassionate with each other in the group. Future research may consider investigating the effectiveness of the MiCBT intervention delivered in

an individual format for care recipients, compared with group format, to control for differential group effects.

Another limitation of the current study is the lack of a measure for practice frequency. Consequently, it cannot be determined whether within-group differences in practice frequency affected participants' follow-up results, since participants in mindfulness-based intervention groups tend to decrease their commitment to daily practice toward the end of the program (e.g., Roubos, 2011). However, despite the likelihood of decreased mindfulness practice frequency between post-program and follow-up in the current study, participants reported continued benefits during this period. Future research may employ a longitudinal design with multiple follow-up time points to help determine the extent to which such a short program has lasting effects.

Moreover, the current study's sample size was very small, thereby limiting the power to detect potential additional significant and clinically reliable changes. Unfortunately, statistical power was not estimated prospectively, and it is likely that the small sample size of the current study may have reduced the statistical power of the analyses utilised in the current study. However, observed power statistics gained retrospectively indicate that statistical power was above the recommended .8 level for all subscales of the DASS and the MSES-R, apart from the Social Skills subscale (Observed Power = .79) and the Interpersonal Effectiveness subscale (Observed Power = .07). Hence, it is likely that the current study lacked sufficient power to detect any real and meaningful improvements in carers' interpersonal skills over time; and therefore the obtained findings of the current study in relation to carers' interpersonal skills should be interpreted with this in mind. It is recommended that future studies utilise a sample size sufficiently large enough to ensure sufficient

statistical power to detect potential beneficial effects of the MiCBT program on carers' psychological wellbeing and mindfulness-related skills.

In addition, with a sample size less than 30 ($N = 19$) it is also possible that the effect sizes in the current study were not reliable estimates of the potential impact the MiCBT program had on carers' psychological well-being and mindfulness-related skills. Hence, the findings of the current study need to be interpreted with caution. The use of a larger sample size in future studies is highly recommended to improve statistical power; specifically, the power to detect real and meaningful improvements in carers' psychological wellbeing and mindfulness-related skills as a result of the MiCBT program. Larger sample sizes will also allow for correlational analyses to more accurately examine potential relationships between the frequency of mindfulness practice and the developments of mindfulness-related skills, as has been highlighted in previous research investigating alternative mindfulness-based interventions.

Additionally, the sample consisted mainly of female participants, thereby possibly limiting the generalisability of the current findings. However, as a non-randomised, convenience sampling method was utilised, it is unclear whether the current sample's demographics reflect the actual gender distribution of the wider family carer population or whether female family carers were just more likely to seek help and support. Although gender differences have not been investigated in past research, further research may help determine whether MiCBT is an equally beneficial treatment for male and female family carers.

Similarly, as participants were self-selected, it may be that family carers who are the most distressed in the community were more likely to seek help and support

from Carers Tasmania, and therefore more likely to perceive a benefit from supportive services. Although this cannot be determined specifically, this possibility is reasonable given the clinically elevated levels of self-reported stress observed amongst family carers at pre-program. Alternatively, as all participants went through a selection and suitability process, those consenting to participate in the MiCBT program may have been more open and receptive to mindfulness principles, thereby increasing the likelihood that they would attend, engage in home practices, and therefore receive benefits. In sum, the current sample may not necessarily be representative of the general family carer population.

The demographic information collected in the current study was also limited in that data regarding variables that may affect the level of stress inherent in the care-giving experience were not collected. For example, there was no information regarding the participants' own mental or physical health status, whether they were the only care-giver for their care-recipient, what relationship (neighbour, friend etc) they had with their care-giver, what the specific needs of their care recipient were, what ailment their carer recipient had, how many years they had been care-giving, and whether they had previous experience or training in care-giving. Future studies would benefit from gathering this information from participants, as it would allow analyses to explore any potential impacts of these factors on the levels of stress, anxiety and depression experienced by family carers.

Additionally, since care recipients' feedback on their experience of the carer's possible change after the MiCBT program was not available, another limitation of the current study is the sole reliance on the use of only two outcome measures, both of which were self-report. Therefore, the possibility of social desirability effects and other response biases in the reporting of symptoms cannot be

excluded, and hence confounding effects cannot be accounted for. Specifically the subjective nature of self-report rating measures means that individual differences in interpreting questions and rating scales may have influenced carers' responses, potentially leading to statistical outliers. In addition, carers in the current sample may have been more likely to rate their psychological wellbeing as lower than carers who had not previously accessed counselling support. Further, with a reliance on self-report measures, it is also possible that carers' responses may have been influenced by social desirability bias. Specifically, they may have responded in a way they thought was expected over time, or in a way that would reflect on them in a positive way, leading to inaccurate results. Indeed, without the use of objective measures, the observed findings completely rely on the introspective ability of the carers in the current sample to reflect on their own levels of psychological wellbeing and mindfulness-related skills.

Future studies could prevent this limitation by incorporating a range of measures, including multiple measures of carers' psychological wellbeing (i.e., distress and functioning) and mindfulness-related skills that significant others, such as partners or care recipients, can score; or alternatively, by incorporating some objective measure of mindfulness-related skills. Further research may also consider incorporating other self-report measures to allow for the statistical control of possible confounding factors, including inventories of general health and wellbeing, stressful life events, and quality of life measures.

Finally, specific information regarding how the program was minimally adapted to suit the needs of carers was not obtained, and therefore it is difficult to determine protocol adherence and fidelity by counsellors across groups as this was not measured in the current study. Further research could measure adherence to the

manualised protocol to ensure standardisation of administration across multiple groups, and to allow comparison across future studies.

Therefore due to the above-mentioned limitations of the current study, it cannot be ascertained that the benefits reported by carers in the current study are exclusively the result of the MiCBT intervention. Hence, further research is clearly needed to investigate the differential benefits of MiCBT, compared with non mindfulness-based interventions also designed to reduce stress and support individuals. Such research may help to determine the potential added benefits of using mindfulness-based techniques over, or in addition to, more traditional Western therapeutic techniques. Similarly, further research comparing MiCBT to other mindfulness-based interventions within this population, may help to clarify which intervention is best suited to the needs of family carers.

Conclusion

In sum, consistent with the main hypotheses, family carers reported significant reductions in depressive, anxious and stress symptoms over the duration of the MiCBT program; a decrease which reflected clinically reliable and meaningful change. Similarly, statistically significant improvements in overall mindfulness-based self-efficacy and a range of mindfulness-related skills were also reported, including emotional regulation, equanimity, distress tolerance, social skills and taking responsibility. In addition, improvements in overall mindfulness-based self-efficacy and emotional regulation skills also reflected clinically reliable and meaningful change. Also consistent with predictions, these benefits were maintained 1 month following the completion of the program.

Hence, the current findings provide preliminary support for the effectiveness of a 9-week, group-based intervention incorporating mindfulness skills with core principles of cognitive behaviour therapy (i.e., MiCBT) in reducing levels of distress and improving mindfulness-based self-efficacy in a small sample of family carers; with maintenance of these improved abilities observed at least 1 month after the completion of the program. In addition, these findings add to the wider literature providing further support for the effectiveness of group-based MiCBT in reducing stress, anxiety and depression amongst non-clinical samples. However, due to the methodological limitations of the current study, the findings must be interpreted with caution. Further studies employing a rigorous methodological design, such as randomised controlled trials, are needed, along with studies that compare the use of MiCBT with other mindfulness-based interventions.

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Appendix A
Human Ethics Approval

Appendix A1: Tasmanian Social Sciences Human Research Ethics Committee (HREC) Approval Letter

Social Science Ethics Officer
Private Bag 01 Hobart
Tasmania 7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148
Katherine.Shaw@utas.edu.au



HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

28 November 2011

Mr Bruno-Andre Cayoun
MiCBT Institute
277 Macquarie St
Hobart Tasmania

Student Researcher: Ticia Glass

Dear Mr Cayoun

Re: FULL ETHICS APPLICATION APPROVAL
Ethics Ref: **H0012078 - The efficacy of MiCBT for voluntary carers and indirect benefits for care recipients. Study 1**

We are pleased to advise that the Tasmania Social Sciences Human Research Ethics Committee approved the above project on 25 November 2011.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.
2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.
3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.
5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. **Failure to submit a Progress Report will mean that ethics approval for this project will lapse.**
6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely

Katherine Shaw
Acting Executive Officer

Appendix B

Information Sheets and Consent Forms

Appendix B1: Information Sheets and Consent Forms for Carers

**Information sheet for Carers****The Efficacy of MiCBT for Family Carers and Indirect Benefits for their Care Recipients**

Chief investigator: Dr Bruno Cayoun, School of Psychology

Student Investigator: Ticia Glass, School of Psychology

Dear Participant,

You are invited to participate in a research study investigating the efficacy of the counselling services run by Carers Tasmania. This study is being conducted as a part of the research component for Clinical Masters student Ticia Glass, and is being supervised by Dr Bruno Cayoun and Professor Greg Hannon, Head of School, from the School of Psychology at the University of Tasmania. The CEO of Carers Tasmania, Janis McKenna, has approved this agency's involvement in the study. This letter has been sent to you by Carers Tasmania, and the researchers have not been given access to any of your private contact details.

The purpose of this study is to investigate the potential benefits experienced by Carers who are involved in either the Mindfulness-integrated Cognitive Behaviour Therapy (MiCBT) program or other counselling services offered through Carers Tasmania. Research indicates that therapeutic techniques involving mindfulness can result in health benefits for people with psychological or chronic physical conditions. In learning mindfulness, we can learn how to become more aware and accepting of physical, emotional and mental experiences, which in turn helps us deal more effectively with stress and difficult circumstances. Research indicates that learning mindfulness skills can aid in reducing depression and the risk of relapse, stress, anxiety and improving life satisfaction. The current study will help to determine whether these benefits are also experienced by Carers who have been or are actively involved in either the MiCBT program or other counselling services run by Carers Tasmania.

This study involves an empirical evaluation of the MiCBT program as run by Carers Tasmania, which may assist Carers Tasmania in applying for future funding for the continuation of the program. Your participation in the current study therefore can benefit future Carers who seek help and support from Carers Tasmania, and also current Carers who continue to seek support from Carers Tasmania in the future.

What your participation would involve

All Carers who have been or are currently actively involved in the MiCBT program or other Counselling services run by Carers Tasmania are invited to participate. If you are a Carer who has already completed the MiCBT program, your participation will only involve the release of your previously completed self-report questionnaires to the researchers for the purpose of analysis. All identifiable information will be removed prior to the release of this information from Carers Tasmania to the researchers, and your answers will be completely confidential.

If you are a Carer who is currently actively involved in the MiCBT program, the study will also only involve the release of your responses on the self-report questionnaires that you will complete as a requirement of the program by Carers Tasmania, to the researchers. All identifiable information will be removed prior to the release of this information from Carers Tasmania to the researchers, and your answers will be completely confidential.

If you are a Carer who is currently actively involved in other counselling services through Carers Tasmania, the study will involve filling out three short self-report questionnaires at the beginning and end of your counselling period, and once again one month after. The same questionnaires will be filled out each time. Each group of questionnaires will take approximately 20-30 minutes to complete. The collection of your data will be particularly helpful in evaluating how much carers benefit from the MiCBT program compared to other counselling services. There will be opportunity for any participant receiving counselling services to be involved in the MiCBT program at any point through consultation with Carers Tasmania. All identifiable information will be removed prior to the release of this information from Carers Tasmania to the researchers, and your answers will be completely confidential.

Participation will be completely voluntary and participants may opt to withdraw from the study at any time without having to cease receiving future support from Carers Tasmania. Also, participation is not a requirement for receiving help and support from Carers Tasmania, whether through the MiCBT program or other counselling services.

Will responses be kept confidential?

Information collected from this experiment will remain confidential, and data will be kept securely at the School of Psychology in locked cabinets and on password-protected computers. All individual identification through names will be removed from the data collected by Carers Tasmania prior to release to the researchers. Individuals will be identified only through coded ID numbers. Individual responses will not be identifiable in published results, as all data are being considered as a group. The raw data will be kept for a minimum of 5 years after publication, as per University requirements, after which they will be shredded/deleted.

Could we withdraw, or make a complaint?

Participation is entirely voluntary. Carers Tasmania and participating Carers are free to refuse to participate or withdraw their data at any time, without effect or explanation.

The questionnaires are relatively short and have previously been used by Carers Tasmania in the MiCBT program. These questionnaires should not invoke any discomfort, distress or harm; however counsellors at Carers Tasmania will be accessible for any participant experiencing any level of distress. All participants will be debriefed shortly after their participation in the study and are invited to voice any concerns or feedback they may wish to share with Carers Tasmania.

Ethics approval and contacts

Ethical Approval for this study has been received from the Human Research Ethics (Tasmania) Network. Should you have any concerns, questions or complaints with regard to the ethical conduct of this research, please contact the Executive Officer of the Human Research Ethics (Tasmania) Network, on 6226 7479 or human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote H12078.

When this study is completed, results will be made available on the School of Psychology website (www.scieng.utas.edu.au/psychol) or can be requested by contacting the Chief investigator, Dr Bruno Cayoun, via email at Bruno.Cayoun@utas.edu.au, or Ticia Glass via email at tmglass@utas.edu.au. Also, if you would like to discuss any aspect of this study please feel free to contact either Dr Bruno Cayoun, or myself. A summary of the results will also be sent to Carers Tasmania for distribution should it be requested.

You may keep this information sheet for your own records. Thank you for taking the time to consider this research study.

Dr Bruno Cayoun

Chief Investigator

School of Psychology

Ticia Glass

Clinical Masters Student

School of Psychology

Statement of Informed Consent for Carers [Study 1]

The Efficacy of MiCBT for Family Carers and Indirect Benefits for Care Recipients

Chief Investigator: Dr Bruno Cayoun, School of Psychology, UTAS

Student Investigator: Ticia Glass, School of Psychology, UTAS

Please read the declarations below carefully and print and sign your name in the space provided.

- I have read and understood the Information Sheet for this study.
- The nature and possible effects of the study have been explained to me, and any questions I had have been answered to my satisfaction.
- I understand that the study will involve the release of the information I provided on the questionnaires I completed when participating in the MiCBT program run by Carers Tasmania, and that my consent permits Carers Tasmania to release this information to the researchers for the purposes of the study.
- I understand that my personal identity will not be identifiable to the researchers, or in any publications resulting from this study.
- I agree that research data gathered for the study may be published, provided that specific Carers and Care Recipients cannot be identified as participants. I understand that raw data will be retained, in secure filing cabinets and computers at the University of Tasmania for a minimum of five years after publication, after which they will be shredded/deleted.
- I agree to participate in this investigation and understand that I may withdraw my participation at any time without prejudice.

Carer's name: _____

Carer's signature: _____ Date: _____

OFFICE USE ONLY**Statement by Counsellor and Investigator:**

I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Counsellor's name: _____

Counsellor's signature: _____ Date: _____

Investigator's name: _____

Investigator's signature: _____ Date: _____

Statement of Informed Consent for Carers [Study 2]

The Efficacy of MiCBT for Family Carers and Indirect Benefits for Care Recipients

Chief Investigator: Dr Bruno Cayoun, School of Psychology, UTAS

Student Investigator: Ticia Glass, School of Psychology, UTAS

Please read the declarations below carefully and print and sign your name in the space provided.

- I have read and understood the Information Sheet for this study.
- The nature and possible effects of the study have been explained to me, and any questions I had have been answered to my satisfaction.
- I understand that study involves completing three self-report measures at three points over the counselling period and then again 1 month later, and the release of this data to the researchers.
- I understand that my personal identity will not be identifiable to the researchers, or in any publications resulting from this study.
- I agree that research data gathered for the study may be published, provided that specific Carers and Care Recipients cannot be identified as participants. I understand that raw data will be retained in secure filing cabinets and computers at the University of Tasmania for a minimum of five years after publication, after which they will be shredded/deleted.
- I agree to participate in this investigation and understand that I may withdraw my participation at any time without prejudice.

Carer's name: _____

Carer's signature: _____ Date: _____

OFFICE USE ONLY**Statement by Counsellor and Investigator:**

I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Counsellor's name: _____

Counsellor's signature: _____ Date: _____

Investigator's name: _____

Investigator's signature: _____ Date: _____

Appendix B2: Information Sheets and Consent Forms for Care Recipients



Information sheet for Care Recipients

The Efficacy of MiCBT for Family Carers and Indirect Benefits for Care Recipients

Chief investigator: Dr Bruno Cayoun

Student Investigator: Ticia Glass

Dear Participant,

You are invited to participate in a research study investigating the efficacy of the counselling services run by Carers Tasmania. This study is being conducted as a part of the research component for Clinical Masters student Ticia Glass, and is being supervised by Dr Bruno Cayoun and Professor Greg Hannon, Head of School, from the School of Psychology at the University of Tasmania. The CEO of Carers Tasmania, Janis McKenna, has approved this agency's involvement in the study. This letter has been provided to you by Carers Tasmania via your carer, and the researchers have not been given access to any of your private contact details.

The purpose of this study is to investigate the potential benefits experienced by carers who are involved in either the Mindfulness-integrated Cognitive Behaviour Therapy (MiCBT) program or other counselling services offered through Carers Tasmania. Research indicates that therapeutic techniques involving mindfulness can result in health benefits for people with psychological or chronic physical conditions. In learning mindfulness, we can learn how to become more aware and accepting of physical, emotional and mental experiences, which in turn helps us deal more effectively with stress and difficult circumstances. Research also shows that learning mindfulness skills can aid in reducing depression and the risk of relapse, stress, anxiety and improving life satisfaction.

Carers Tasmania have offered an MiCBT program over the last three years to support and equip carers of individuals with either physical or intellectual disability, cognitive impairment, mental illness, terminal illness, chronic condition or who are frail and aged in the Tasmanian Community. During this time, both carers and care recipients have anecdotally reported a significant improvement in their relationships with each other as a result of the program. The current study aims to investigate the potential impact of the MiCBT program on carers' relationships with their care recipients. Therefore, we require the participation of willing care recipients who wish to assist us in investigating this potential benefit of the program and other counselling programs run by Carers Tasmania.

This study involves an empirical evaluation of the MiCBT program as run by Carers Tasmania, which will assist Carers Tasmania in applying for future funding for the continuation of the program. Your participation in the current study therefore will benefit future Carers and Care Recipients who seek help and support from Carers Tasmania, and also those Carers who continue to seek support from Carers Tasmania in the future.

What your participation would involve

Participation will involve completing a short 10-item questionnaire relating to your relationship with your Carer. It will require you to remember and compare your relationship with your Carer over the duration of the MiCBT or counselling programs (i.e., a 9-week period). The Questionnaire should take a total of 20-30 minutes to complete. All identifiable information will be removed prior to the release of this information from Carers Tasmania to the researchers, and your answers will be completely confidential.

Note that your participation in this study is not a requirement for your Carer to continue receiving help and support from Carers Tasmania, whether through the MiCBT program or other counselling services. Participation will be completely voluntary and participants may withdraw from the study at any time without penalty. It is important that you do not feel pressured by anyone to participate in the current study.

Will responses be kept confidential?

Information collected from the questionnaire will remain confidential, and data will be kept securely at the School of Psychology in locked cabinets and on password-protected computers. All individual identification through names will be removed from the data collected by Carers Tasmania prior to release to the researchers. Individuals will be identified only through coded ID numbers. Individual responses will not be identifiable in published results, as all data are being considered as a group. The raw data will be kept for a minimum of 5 years after publication, as per University requirements, after which they will be shredded/deleted.

Could we withdraw, or make a complaint?

Participation is entirely voluntary. Participating carers and care recipients are free to refuse to participate or withdraw their data at any time, without effect or explanation.

The questionnaires should not invoke any discomfort, distress or harm; however it is suggested that your carer be accessible to you for support at the time of filling out the questionnaire.

Ethics approval and contacts

Ethical Approval for this study has been received from the Human Research Ethics (Tasmania) Network. Should you have any concerns, questions or complaints with regard to the ethical conduct of this research, please contact the Executive Officer of the Human Research Ethics (Tasmania) Network, on 6226

7479 or human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote H12078.

When this study is completed, results will be made available on the School of Psychology website (www.scieng.utas.edu.au/psychol) or can be requested by contacting the Chief investigator, Dr Bruno Cayoun, via email at Bruno.Cayoun@utas.edu.au, or Ticia Glass via email at tmglass@utas.edu.au. Also, if you would like to discuss any aspect of this study please feel free to contact either Dr Bruno Cayoun, or myself. A summary of the results will also be sent to Carers Tasmania for distribution should it be requested. You may keep this information sheet for your own records.

If you wish to participate in this study please complete the questionnaire and return it to Carers Tasmania in the reply paid envelope provided. This information sheet is yours to keep. Thank you for taking the time to consider this research study.

Dr Bruno Cayoun

Chief Investigator

School of Psychology

Ticia Glass

Clinical Masters Student

School of Psychology

Statement of Informed Consent for Care Recipients

The Efficacy of MiCBT for Family Carers and Indirect Benefits for Care Recipients

Chief Investigator: Dr Bruno Cayoun, School of Psychology, UTAS

Student Investigator: Ticia Glass, School of Psychology, UTAS

Please read the declarations below carefully and print and sign your name in the space provided.

- I have read and understood the Information Sheet for this study.
- The nature and possible effects of the study have been explained to me, and any questions I had have been answered to my satisfaction.
- I understand that study involves completing a short 10-item questionnaire and the release of this data to the researchers.
- I understand that my personal identity will not be identifiable to the researchers, or in any publications resulting from this study.
- I agree that research data gathered for the study may be published, provided that specific Carers and Care Recipients cannot be identified as participants. I understand that raw data will be retained, in secure filing cabinets and computers at the University of Tasmania for a minimum of five years after publication, after which they will be shredded/deleted.
- I agree to participate in this investigation and understand that I may withdraw my participation at any time without prejudice.

Care recipient's name: _____

Care recipient's signature: _____ Date: _____

OFFICE USE ONLY:**Statement by Carer and Investigator:**

I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Carer's name: _____

Carer's signature: _____ Date: _____

Investigator's name: _____

Investigator's signature: _____ Date: _____

Appendix C:
Four-Stage Model of MiCBT

Stage	Aims	Techniques Taught	Duration	Homework
1 Personal Stage	<p>Aims to teach participants to internalise attention in a way that decreases emotional reactivity and promotes deep levels of awareness and acceptance.</p> <p>Emphasis in mindfulness training is placed on the internal context of experience to equip participants with an increased sense of self-control and self-efficacy in handling thoughts and emotions before addressing life difficulties for which they sought therapy.</p>	<p>Mindfulness of body posture and movement Mindfulness of body (posture and movements) in daily actions introduces the notion of present-moment awareness.</p> <p>In mindfulness training, emphasis is placed on the internal context of experience to equip participants with self-awareness, self-acceptance, and an increased sense of self-control and self-efficacy in handling thoughts and emotions. Emphasis also is placed on commitment to practice.</p> <p>Progressive Muscle Relaxation (PMR) PMR proves a relaxing effect and an initial and reassuring sense of agency over aversive bodily experiences, which assists in reinforcing participants' initial effort to commit to daily practice. PMR is only used in the first two weeks however, as a preparatory measure.</p> <p>Normalisation and Psycho-education about potential early difficulties of mindfulness practice are important at this early stage.</p>	<p>Stage 1 requires between three and five weeks, depending on personal and clinical factors such as severity of the symptoms and adherence to treatment.</p>	<p>Formal practice Participants are then taught to practice mindfulness of breath for one to two weeks and basic (unilateral) body-scanning for the following two weeks (both described earlier). The effort to decrease the habit of identifying with moment-to-moment experience trains patients to process information in a less self-referential, more 'objective', manner.</p> <p>To increase training efficacy, patients learn to adhere to three fundamental principles: sufficient frequency (usually twice daily), sufficient duration (usually 30-min per session) and sufficient accuracy of practice (conscious effort to decrease identification with emerging experiences).</p> <p>Informal practice In addition, patients are invited to monitor body sensations as continually as possible in everyday situations. An Interoceptive Signature form (Cayoun, 2011) is used to identify typical patterns of</p>

				<p>interoceptive dynamics experienced during stressful events and is used to record the patient's increasing capacity to prevent the usual response (i.e., indicators of equanimity).</p> <p>Interoceptive awareness, developed during formal meditation practice, becomes a skilful means for preventing the reinforcement of unhelpful habits in daily life.</p>
<p>2 Exposure Stage</p>	<p>Aims to help participants learn to remain "equanimous" whilst visualizing and experiencing external situations to extinguish the conditioned response; that is, avoidance of stressful and avoided situations.</p> <p>Stage 2 is the first "externalising" stage, during which attention is partly directed outward to regulate behaviour by applying Stage 1 skills in contexts of avoidance.</p>	<p>Bi-polar Exposure</p> <p>An imagery-based exposure method is the first procedure used with participants during Stage 2.</p> <p>Guided by a set of varied targets listed hierarchically as a function of subjective units of distress, bi-polar exposure consists of three steps:</p> <p>1. It requires imagining the <i>worst</i> case scenarios that could happen when <i>in-vivo</i> exposure takes place two days later (producing catastrophic thoughts and co-emerging body sensations) while remaining cognisant and non-reactive. <i>Desensitisation</i>.</p>	<p>Stage 2 is usually implemented over two to three weeks, depending on needs.</p>	<p>Mindfulness practice :</p> <p>Week 1: Daily practice of part by part without the CD.</p> <p>Week 2: Symmetrical scanning for 30 mins twice daily (track 2 on advanced training CD)</p> <p>Participants are asked to implement Bi-polar exposure following each practice of mindfulness meditation (usually morning and evening) for two days (i.e., four times) prior to commencing <i>in-vivo</i> exposure.</p> <p>Within the same week, the participant undertakes the next target on the hierarchical list,</p>

		<p>2. A one-minute break from exposure is taken to “let go of the scenario” by focusing calmly on the breath.</p> <p>3. Then, it requires imagining the <i>best</i> case scenarios that could happen when <i>in-vivo</i> exposure takes place two days later, while remaining cognisant and non-reactive to pleasant body sensations.</p> <p>After four bi-polar exposure sessions, patients then proceed with <i>in-vivo</i> exposure to the chosen target applying the same focus on interoception and making the same effort of not reacting to body sensations.</p>		<p>attracting a greater SUDS level. Participants are usually able to neutralise two to three different targets per week, producing immediate increase in self-confidence and decreased general avoidance.</p> <p>Participants are also asked to continue informal practice, pre-and post-sleep awareness, and commitment to physical immobility</p>
3 Interpersonal Stage	<p>In stage 3, participants learn to decrease self-referential processing by considering others’ emotional experiences and by not reacting to others’ reactivity.</p> <p>Participants are encouraged to apply stages 1 and 2 skills during interpersonal communication, teaching them that their emotional reactivity to external stimuli is a function of their unawareness and</p>	<p>Experiential Ownership This mindfulness-based interpersonal skill learned during the first week of stage 3, uses a form of exposure to understand and accept others’ ways of communicating.</p> <p>Participants learn to apply the skills from previous stages to at least two diverse interpersonally uncomfortable situations that are currently holding back the participants’ progress, usually starting with one that produces mild to moderate distress.</p>	Stage 3 is usually implemented over two weeks.	<p>Mindfulness practice: Week 1: sweeping en masse daily Week 2: partial sweeping for 30mins twice daily (track 4) and 14 mins in silence</p> <p>Whilst continuing with bipolar and in vivo exposure to the 2 most severe targets on the SUDS form</p> <p>Participants are also encouraged to continue with informal practice, and pre- and post-sleep body awareness.</p>

	unmanageability of body sensations.	<p>Specifically, as participants remain mindful during body scanning techniques, and learn to take full responsibility (“ownership”) for what they feel, they also learn to interrupt self-referential (default mode) processing and remain as objective as possible, relying on sensory cues and not their usual judgments, to choose their response.</p> <p>Assertiveness and Social Skills In the second week of Stage 3, patients learn assertiveness skills and other social skills training if necessary. They learn to use standard assertive communication, which they are taught to combine with experiential ownership skills in as many situations as possible (at least two).</p>		
4 Empathic Stage	Aims to extend stage 3 skills to a more global awareness of how human beings can overcome the perpetuation of unnecessary suffering and influence each other for the better. This stage also helps normalise patients’ perceived shortcomings and distress. Through normalising	<p>Empathic Skills This stage teaches empathic skills grounded in bodily experience and in genuine respect for ethical boundaries in daily actions. Patients learn that they are the first recipients of the emotions they generate and learn to choose carefully what emotion to promote and what emotion to let go.</p>	Stage 4 is usually implemented over 2 weeks	<p>Mindfulness Practice Week 1: practice transversal scanning daily And 5-10 min practice of loving kindness meditation twice daily following each scanning practice session; once using track 10 and once without using own thoughts and formulations.</p>

	<p>suffering, patients learn to dis-identify from usual judgments about themselves and others and allow unpleasant events to arise and pass more easily.</p> <p>Patients also learn to generalise to others what they have learned to integrate in their own life in the first three stages.</p>	<p>Loving Kindness Taught during the first week, Loving Kindness combines a set of simple positive affirmations that are paired with the pleasant body sensations produced by advanced body-scanning methods to create or enhance self-compassion and compassion towards others.</p> <p>Grounded Empathy In the second week of Stage 4, patients learn to materialise their sense of connectedness with others around them through observable actions. They learn to “ground” their developing empathy for others in ethical awareness and make a commitment to perform ethical actions for the entire week, as a behavioural experiment.</p> <p>As patients learn to generate helpful thoughts and perform worthwhile actions, they gradually internalise the locus of self-worth. With less reliance on external factors to feel worthy and deserving self-acceptance, the likelihood of relapse is lessened.</p>		<p>Participants are also encouraged to continue with informal practice, generalised mindfulness and pre- and post-sleep body awareness.</p>
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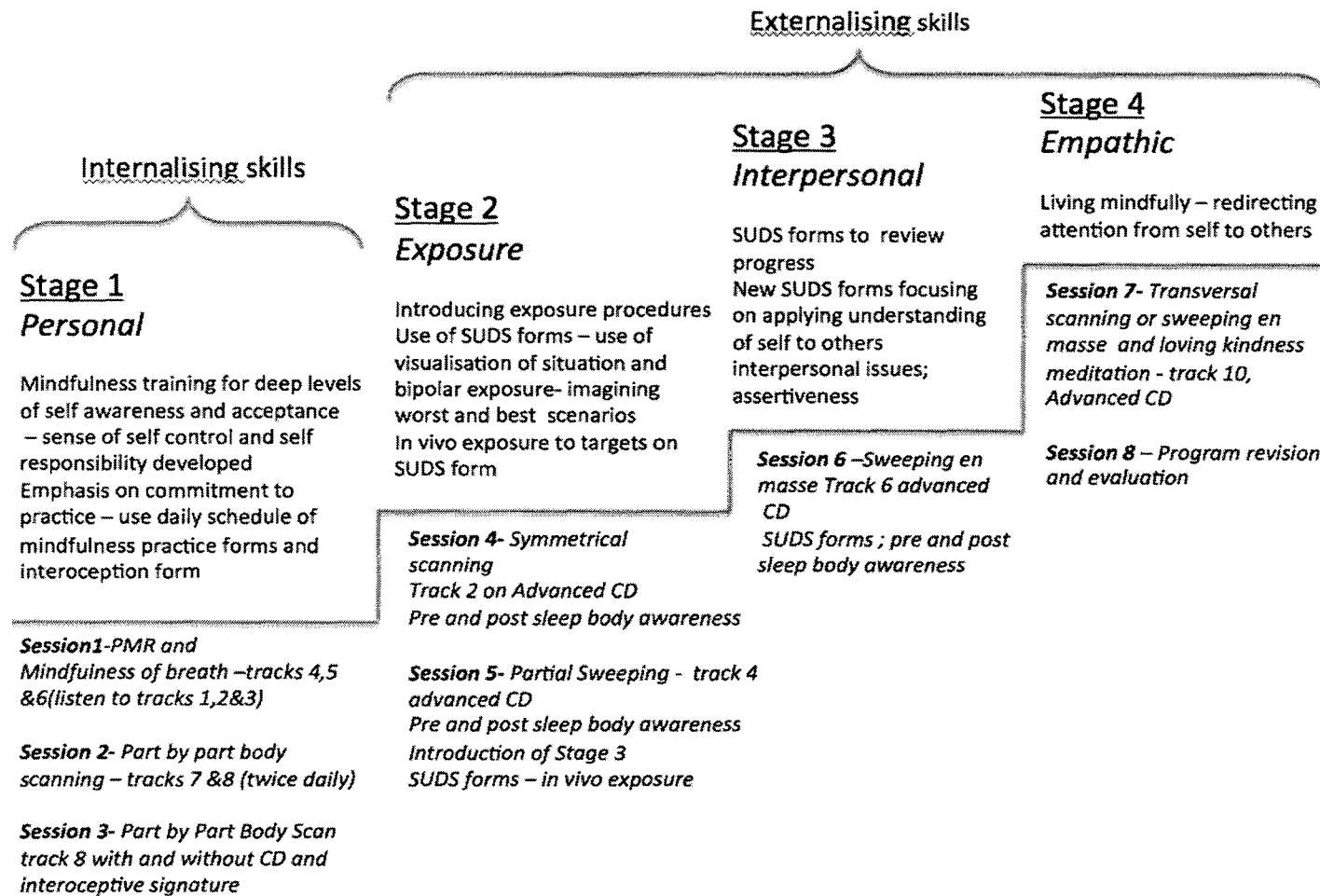


Figure 1. The Four-stage Model of Mindfulness-integrated Cognitive Behaviour Therapy.

Note: Track numbers refer to audio CD tracks providing instructions for various levels of mindfulness meditation practice in the Burmese Vipassana tradition (Cayoun, 2004; Cayoun, 2005).

Appendix D
Self-Report Questionnaire

Appendix D1: Care Recipient Questionnaire



**The Efficacy of MiCBT for Voluntary Carers and Indirect Benefits for
Care Recipients**

Chief investigator: Dr Bruno Cayoun, School of Psychology

Student Investigator: Ticia Glass, School of Psychology

*Please answer the following questions in relation to your relationship
with your Carer over the last 9 weeks.*

Date: _____

Gender: M/F (Please circle)

Date of Birth: _____

Please indicate the main reason for which you receive support and care from your Carer:

☐ Physical disability: _____

☐ Cognitive impairment/disability: _____

☐ Mental illness: _____

☐ Terminal illness: _____

☐ Chronic condition: _____

☐ Frailty/Age: _____

Is English your first Language? Yes / no

If no, what is your first language?: _____

1. **Try to remember:** On average how much was your Carer able to help you 9 weeks ago? Please rate on the 10 point scale by circling a number out of 10 below:

(0 = not at all, 5 = somewhat able to help, 10 = very much able to help)

0 1 2 3 4 5 6 7 8 9 10

2. Has this changed over the last 9 weeks in your opinion? **Yes / No**
(*please circle*)

- a. If yes, has your Carer been: **MORE / LESS** able to help?
(*please circle*)

3. How well has your carer been able to help you recently compared with 9 weeks ago? Please rate by circling a number out of 10 below:

(0 = definitely less able to help than usual, 5 = just as able to help as usual, 10 = definitely more able to help than usual)

0 1 2 3 4 5 6 7 8 9 10

4. Compared to 9 weeks ago, I believe my relationship with my Carer is now: *(please rate by circling a number out of 10 below)*

(0 = much worse, 5 = the same, 10 = much better)

0 1 2 3 4 5 6 7 8 9 10

5. *Please rate the following statements on a scale from 1 to 5;*

1 = Strongly Agree

2 = Agree Somewhat

3 = Neutral

4 = Disagree Somewhat

5 = Strongly Disagree

- a. Over the last 9 weeks my Carer has listened to me more effectively _____
- b. Over the last 9 weeks my Carer has spent more time with me _____
- c. Over the last 9 weeks my Carer and I have argued more than usual _____
- d. Over the last 9 weeks my Carer has been more stressed than usual _____
- e. Over the last 9 weeks my relationship with my Carer has improved _____
- f. Over the last 9 weeks my Carer has been less positive with me than usual _____
- g. Over the last 9 weeks I have noticed a change in the way my Carer relates to me _____
- h. Over the last 9 weeks my Carer has spent less time with me _____
- i. Over the last 9 weeks my Carer and I have had less arguments _____
- j. Over the last 9 weeks my Carer has been less stressed than usual _____
- k. Over the last 9 weeks I have felt more comfortable with my Carer _____
- l. Over the last 9 weeks my relationship with my Carer has worsened _____
- m. Over the last 9 weeks my Carer has been less attentive to me _____
- n. Over the last 9 weeks my Carer has been more positive with me than usual _____
- o. Over the last 9 weeks I have felt less comfortable with my Carer _____

6. My relationship with my Carer has _____ over the last 9 weeks
- Improved
 - Stayed the same
 - Worsened
7. My Carer and I now argue _____ we did 9 weeks ago
- More than
 - Less than
 - As much as
8. There is _____ tension in my relationship with my Carer as there was 9 weeks ago
- More
 - Less
 - As much
9. My Carer does _____ for me than he or she did 9 weeks ago
- More
 - Less
 - As much
10. I believe my Carer is _____ caring than he or she was 9 weeks ago
- More
 - Less
 - As much
11. I believe that the quality of my relationship with my Carer is now _____ it was 9 weeks ago
- Better than
 - Worse than
 - The same as

Thank you for your participation!

**Please return this questionnaire upon completion to Carers
Tasmania in the envelope provided**

Appendix E

SPSS Output

Appendix E1: Sample Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	33	43.250	82.916	61.53350	9.621135
Valid N (listwise)	33				

sex

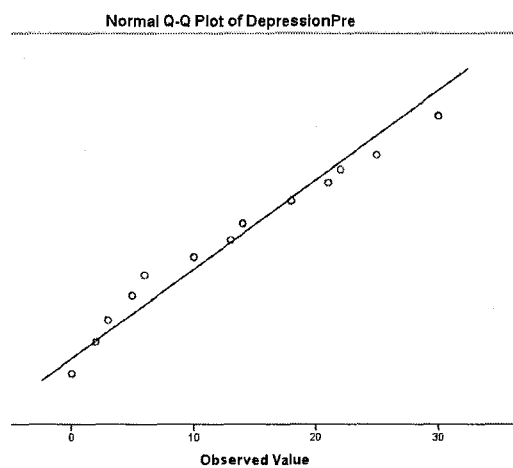
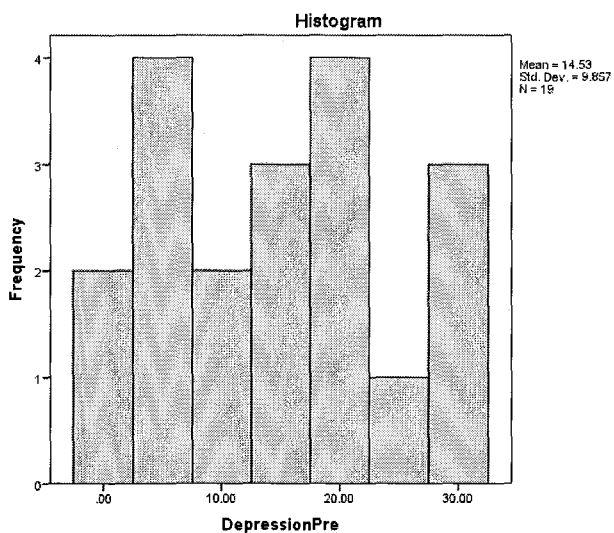
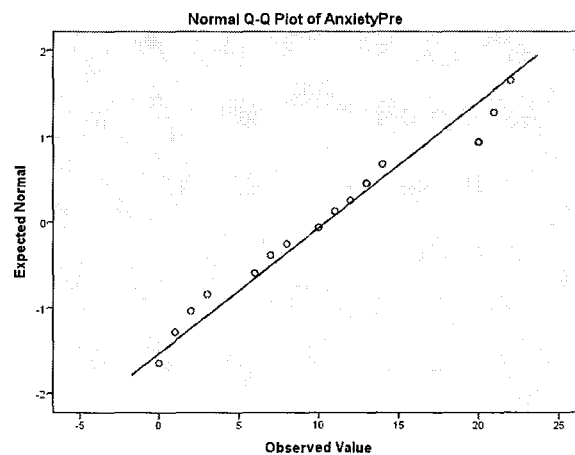
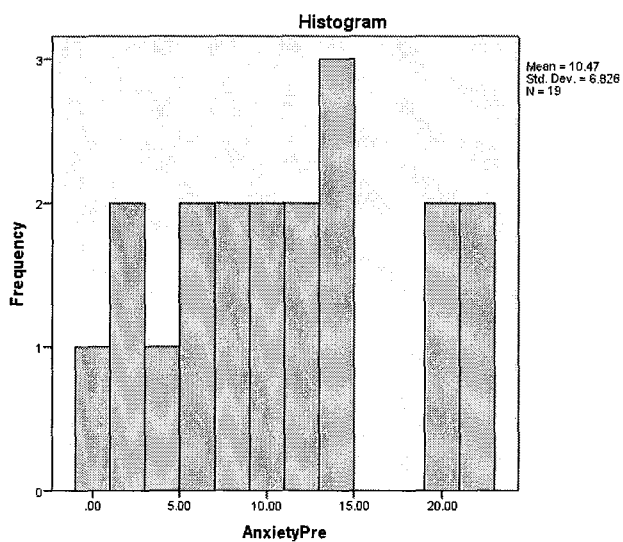
	Frequency	Percent	Valid Percent	Cumulative Percent
Female	30	90.9	90.9	90.9
Valid Male	3	9.1	9.1	100.0
Total	33	100.0	100.0	

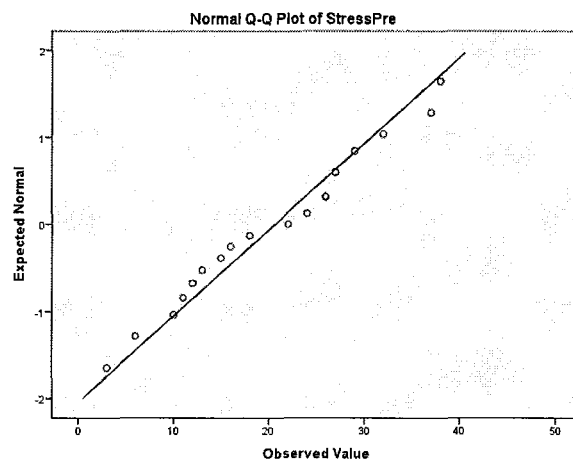
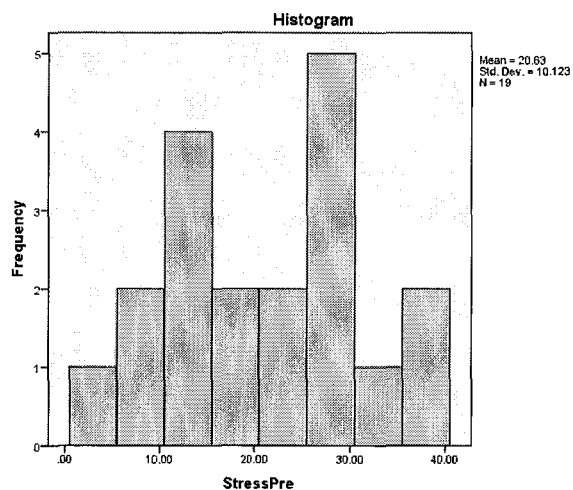
Appendix E2: SPSS Output for Data Screening

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
AnxietyPre	.129	19	.200 [*]	.947	19	.353
DepressionPre	.122	19	.200 [*]	.936	19	.226
StressPre	.123	19	.200 [*]	.968	19	.732
DassTPre	.116	19	.200 [*]	.954	19	.465

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction



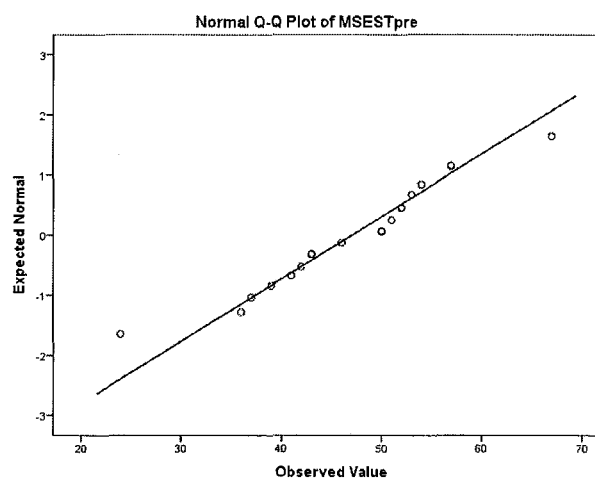
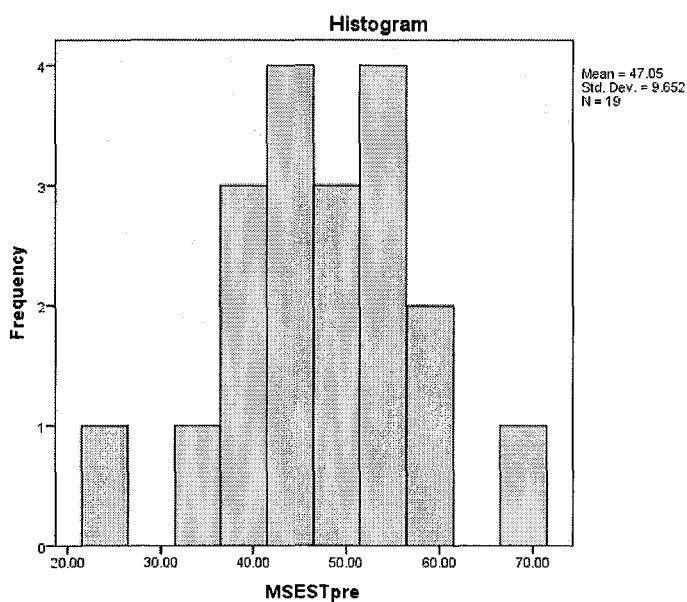


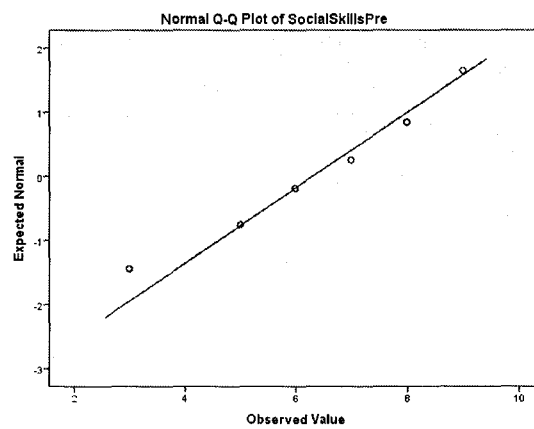
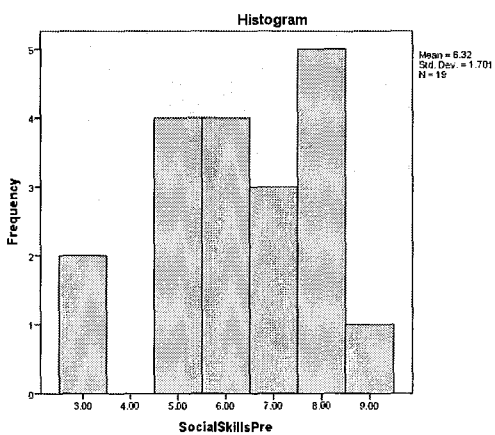
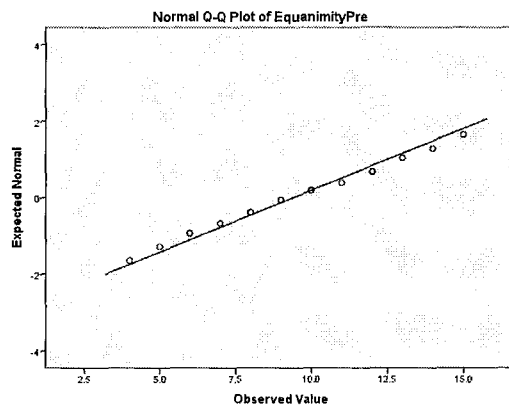
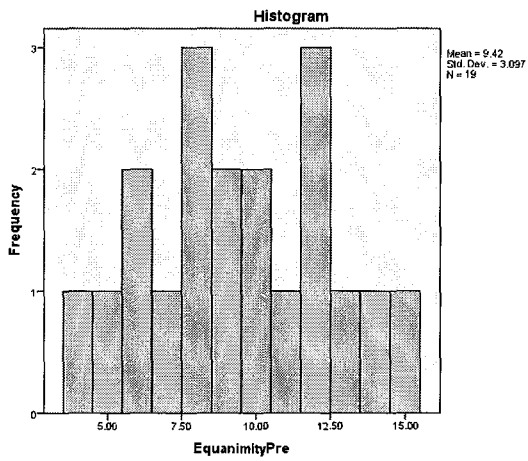
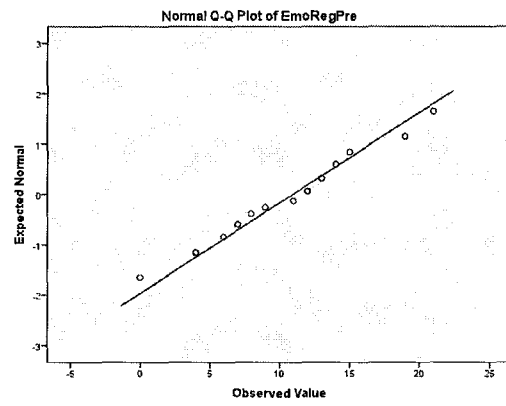
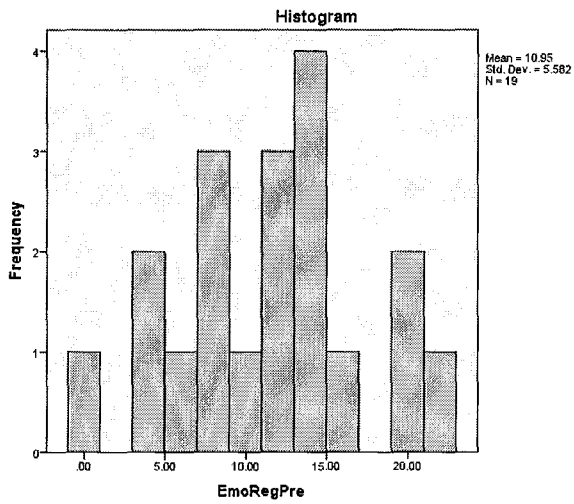
Tests of Normality

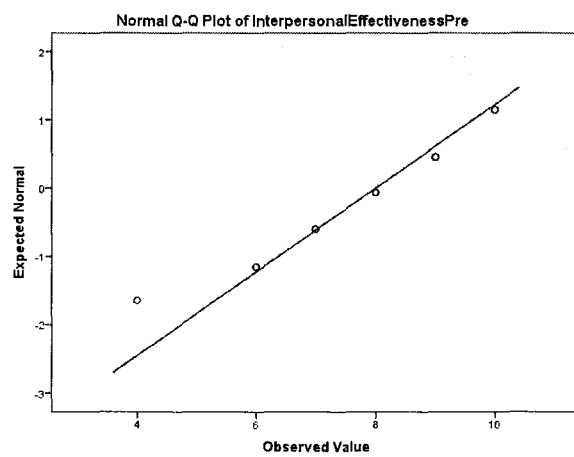
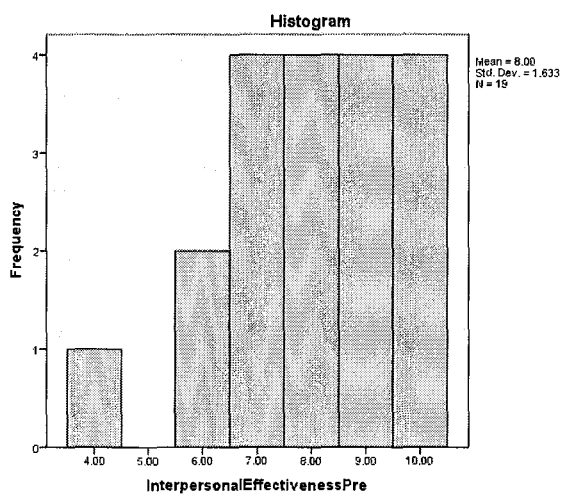
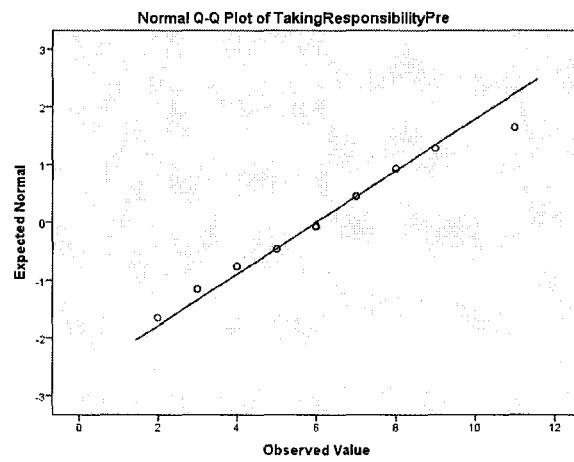
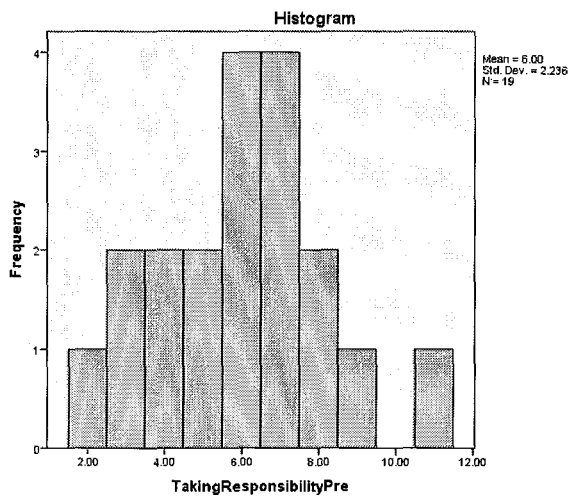
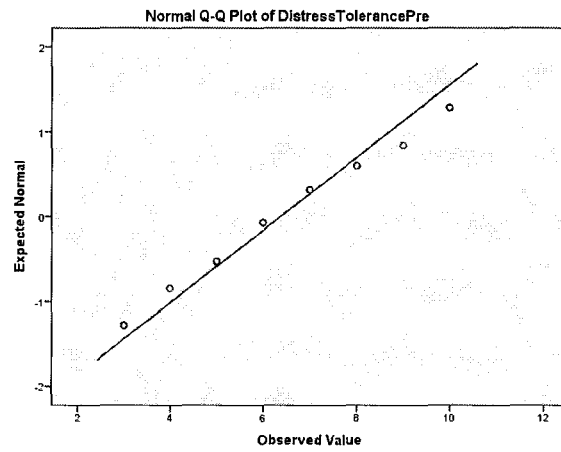
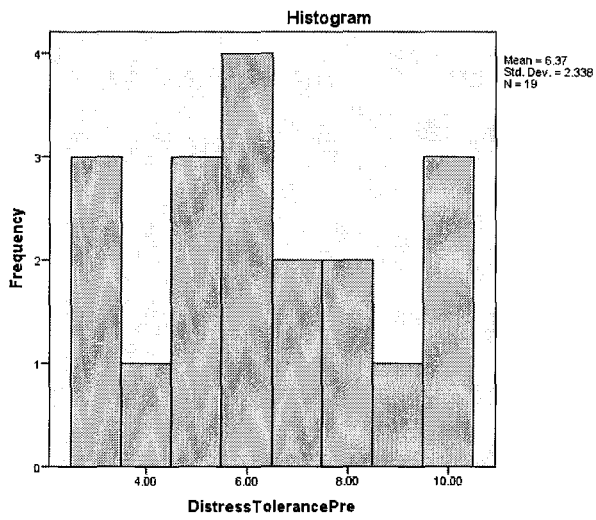
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MSESTpre	.146	19	.200 [*]	.971	19	.802
EmoRegPre	.101	19	.200 [*]	.977	19	.909
EquanimityPre	.113	19	.200 [*]	.977	19	.902
SocialSkillsPre	.155	19	.200 [*]	.926	19	.146
DistressTolerancePre	.142	19	.200 [*]	.930	19	.177
TakingResponsibilityPre	.132	19	.200 [*]	.974	19	.857
InterpersonalEffectivenessPre	.151	19	.200 [*]	.921	19	.118

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction







Appendix E3: SPSS Output for DASS

Means and Standard Deviations

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
AnxietyPre	19	.00	22.00	10.4737	6.82616
DepressionPre	19	.00	30.00	14.5263	9.85657
StressPre	19	3.00	38.00	20.6316	10.12264
AnxietyEnd	19	.00	11.00	4.0000	3.31662
DepressionEnd	19	.00	23.00	5.2105	5.93089
StressEnd	19	.00	18.00	6.5263	5.10303
Anxiety1mf	19	.00	14.00	3.1579	3.86240
Depression1mf	19	.00	17.00	3.8421	4.75235
Stress1mf	19	.00	16.00	5.8421	4.99181
Valid N (listwise)	19				

Depression – ANOVA

Within-Subjects Factors	
Depression	Dependent Variable
1	DepressionPre
2	DepressionEnd
3	Depression1mf

Descriptive Statistics			
	Mean	Std. Deviation	N
DepressionPre	14.5263	9.85657	19
DepressionEnd	5.2105	5.93089	19
Depression1mf	3.8421	4.75235	19

Mauchly's Test of Sphericity ^a							
Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Depression	.772	4.395	2	.111	.814	.884	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Square d	Noncent Paramet er	Observ ed Power ^a
Depression	Sphericity	1284.45	2	642.22	17.02	.000	.486	34.045	.999
	Assumed	6		8	3				
	Greenhous	1284.45	1.629	788.54	17.02	.000	.486	27.728	.998
	e-Geisser	6		2	3				
	Huynh-	1284.45	1.768	726.37	17.02	.000	.486	30.101	.999
	Feldt	6		7	3				
	Lower-	1284.45	1.000	1284.4	17.02	.001	.486	17.023	.974
Error(Depressi on)	bound	6		56	3				
	Sphericity	1358.21	36	37.728					
	Assumed	1							
	Greenhous	1358.21	29.32	46.323					
	e-Geisser	1	0						
	Huynh-	1358.21	31.82	42.671					
	Feldt	1	9						
	Lower-	1358.21	18.00	75.456					
	bound	1	0						

a. Computed using alpha = .05

Depression -- Pairwise Comparisons

Estimates

Depression	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	14.526	2.261	9.776	19.277
2	5.211	1.361	2.352	8.069
3	3.842	1.090	1.552	6.133

Pairwise Comparisons

(I) Depression	(J) Depression	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	9.316 [*]	2.260	.002	3.353	15.279
	3	10.684 [*]	2.172	.000	4.951	16.418
2	1	-9.316 [*]	2.260	.002	-15.279	-3.353
	3	1.368	1.445	1.000	-2.446	5.183

3	1	-10.684*	2.172	.000	-16.418	-4.951
	2	-1.368	1.445	1.000	-5.183	2.446

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Anxiety - ANOVA

Within-Subjects Factors

Anxiety	Dependent Variable
1	AnxietyPre
2	AnxietyEnd
3	Anxiety1mf

Descriptive Statistics

	Mean	Std. Deviation	N
AnxietyPre	10.4737	6.82616	19
AnxietyEnd	4.0000	3.31662	19
Anxiety1mf	3.1579	3.86240	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx . Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Anxiety	.627	7.944	2	.019	.728	.776	.500

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Anxiety	Sphericity Assumed	608.877	2	304.439	21.784	.000	.548	43.567
	Greenhouse-Geisser	608.877	1.456	418.088	21.784	.000	.548	31.724

Error(Anxiety)	Huynh-Feldt	608.87	1.552	392.40	21.784	.000	.548	33.801	1.000
		7		0					
	Lower-bound	608.87	1.000	608.87	21.784	.000	.548	21.784	.993
		7		7					
	Sphericity	503.12	36	13.976					
	Assumed	3							
	Greenhouse-Geisser	503.12	26.21	19.193					
		3	4						
	Huynh-Feldt	503.12	27.93	18.014					
		3	0						
	Lower-bound	503.12	18.00	27.951					
		3	0						

a. Computed using alpha = .05

Anxiety – Pairwise Comparisons

Estimates

Anxiety	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	10.474	1.566	7.184	13.764
2	4.000	.761	2.401	5.599
3	3.158	.886	1.296	5.020

Pairwise Comparisons

(I) Anxiety	(J) Anxiety	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	6.474 [*]	1.495	.001	2.527	10.420
	3	7.316 [*]	1.224	.000	4.086	10.545
2	1	-6.474 [*]	1.495	.001	-10.420	-2.527
	3	.842	.825	.962	-1.334	3.018
3	1	-7.316 [*]	1.224	.000	-10.545	-4.086
	2	-.842	.825	.962	-3.018	1.334

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Stress - ANOVA

Within-Subjects Factors

Stress	Dependent Variable
1	StressPre
2	StressEnd
3	Stress1mf

Descriptive Statistics

	Mean	Std. Deviation	N
StressPre	20.6316	10.12264	19
StressEnd	6.5263	5.10303	19
Stress1mf	5.8421	4.99181	19

Mauchly's Test of Sphericity^a

Within Subject s Effect	Mauchly's W	Approx . Chi-Squar e	df	Sig.	Epsilon ^b		
					Greenhous e-Geisser	Huynh-Feldt	Lower-bound
Stress	.647	7.402	2	.025	.739	.789	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Paramete r	Observe d Power ^a
Stress	Sphericity Assumed	2648.31 6	2	1324.15 8	41.85 2	.000	.699	83.703	1.000
	Greenhous e-Geisser	2648.31 6	1.478	1791.59 5	41.85 2	.000	.699	61.865	1.000
	Huynh-Feldt	2648.31 6	1.579	1677.36 2	41.85 2	.000	.699	66.078	1.000
	Lower- bound	2648.31 6	1.000	2648.31 6	41.85 2	.000	.699	41.852	1.000
	Sphericity Assumed	1139.01 8	36	31.639					
	Greenhous e-Geisser	1139.01 8	26.607	42.808					
Error (Stress)	Huynh-Feldt	1139.01 8	28.419	40.079					

Lower-bound	1139.018	18.000	63.279					
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a. Computed using alpha = .05

Stress – Pairwise Comparisons

Estimates

Stress	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	20.632	2.322	15.753	25.511
2	6.526	1.171	4.067	8.986
3	5.842	1.145	3.436	8.248

Pairwise Comparisons

(I) Stress	(J) Stress	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	14.105 [*]	2.259	.000	8.143	20.068
	3	14.789 [*]	1.789	.000	10.067	19.512
2	1	-14.105 [*]	2.259	.000	-20.068	-8.143
	3	.684	1.298	1.000	-2.741	4.110
3	1	-14.789 [*]	1.789	.000	-19.512	-10.067
	2	-.684	1.298	1.000	-4.110	2.741

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Norms Comparisons – Pre-program

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
DepressionPre	19	14.5263	9.85657	2.26125

One-Sample Test

	Test Value = 5.55					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DepressionPre	3.970	18	.001	8.97632	4.2256	13.7270

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
AnxietyPre	19	10.4737	6.82616	1.56603

One-Sample Test

	Test Value = 3.56					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
AnxietyPre	4.415	18	.000	6.91368	3.6236	10.2038

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
StressPre	19	20.6316	10.12264	2.32229

One-Sample Test

	Test Value = 9.27					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
StressPre	4.892	18	.000	11.36158	6.4826	16.2405

Norms Comparisons – Post-program**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
DepressionEnd	19	5.2105	5.93089	1.36064

One-Sample Test

	Test Value = 5.55					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DepressionEnd	-.249	18	.806	-.33947	-3.1981	2.5191

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
AnxietyEnd	19	4.0000	3.31662	.76089

One-Sample Test

	Test Value = 3.56					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
AnxietyEnd	.578	18	.570	.44000	-1.1586	2.0386

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
StressEnd	19	6.5263	5.10303	1.17072

One-Sample Test

	Test Value = 9.27					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
StressEnd	-2.344	18	.031	-2.74368	-5.2033	-.2841

Appendix E4: SPSS Output for MSES-R

Means and Standard Deviations

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
MSESTpre	19	24.00	67.00	47.0526	9.65214
EmoRegPre	19	.00	21.00	10.9474	5.58245
EquanimityPre	19	4.00	15.00	9.4211	3.09688
SocialSkillsPre	19	3.00	9.00	6.3158	1.70139
DistressTolerancePre	19	3.00	10.00	6.3684	2.33834
TakingResponsibilityPre	19	2.00	11.00	6.0000	2.23607
InterpersonalEffectivenessPre	19	4.00	10.00	8.0000	1.63299
MSESTend	19	49.00	79.00	61.1579	8.71310
EmoRegEnd	19	11.00	23.00	16.8421	3.33772
EquanimityEnd	19	5.00	16.00	11.7895	2.78047
SocialSkillsEnd	19	4.00	11.00	7.4737	1.71167
DistressToleranceEnd	19	4.00	12.00	8.4211	2.45664
TakingResponsibilityEnd	19	4.00	12.00	8.6316	1.94966
InterpersonalEffectivenessEnd	19	2.00	11.00	8.2105	2.04339
MSEST1mf	19	42.00	80.00	63.0000	10.92906
EmoReg1mf	19	6.00	24.00	18.1053	4.89779
Equanimity1mf	19	8.00	16.00	11.6842	2.80976
SocialSkills1mf	19	4.00	12.00	7.7368	1.55785
DistressTolerance1mf	19	6.00	12.00	8.8947	1.96906
TakingResponsibility1mf	19	5.00	12.00	8.3158	2.26207
InterpersonalEffectiveness1mf	19	1.00	11.00	8.2632	2.05053
Valid N (listwise)	19				

MSES-R Total - ANOVA**Within-Subjects Factors**

MSESRtotal	Dependent Variable
1	MSESTpre
2	MSESTend
3	MSEST1mf

Descriptive Statistics

	Mean	Std. Deviation	N
MSESTpre	47.0526	9.65214	19
MSESTend	61.1579	8.71310	19
MSEST1mf	63.0000	10.92906	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
MSESRtotal	.801	3.782	2	.151	.834	.909	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. t.	Observed Power ^a
MSESRtotal	Sphericity Assumed	2892.246	2	1446.123	35.119	.000	.661	70.237	1.000
	Greenhouse-Geisser	2892.246	1.667	1734.596	35.119	.000	.661	58.556	1.000
	Huynh-Feldt	2892.246	1.817	1591.554	35.119	.000	.661	63.819	1.000
	Lower-bound	2892.246	1.000	2892.246	35.119	.000	.661	35.119	1.000
	Sphericity Assumed	1482.421	36	41.178					
Error (MSESRtotal)	Greenhouse-Geisser	1482.421	30.013	49.393					
	Huynh-Feldt	1482.421	32.710	45.320					
	Lower-bound	1482.421	18.000	82.357					

a. Computed using alpha = .05

MSES-R – Pairwise Comparisons**Estimates**

MSESRtotal	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	47.053	2.214	42.400	51.705
2	61.158	1.999	56.958	65.357
3	63.000	2.507	57.732	68.268

Pairwise Comparisons

(I) MSESRTotal	(J) MSESRTotal	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-14.105 [*]	2.228	.000	-19.985	-8.225
	3	-15.947 [*]	2.368	.000	-22.196	-9.699
2	1	14.105 [*]	2.228	.000	8.225	19.985
	3	-1.842	1.560	.759	-5.960	2.276
3	1	15.947 [*]	2.368	.000	9.699	22.196
	2	1.842	1.560	.759	-2.276	5.960

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Equanimity - ANOVA

Within-Subjects Factors

Equanimity	Dependent Variable
1	EquanimityPre
2	EquanimityEnd
3	Equanimity1mf

Descriptive Statistics

	Mean	Std. Deviation	N
EquanimityPre	9.4211	3.09688	19
EquanimityEnd	11.7895	2.78047	19
Equanimity1mf	11.6842	2.80976	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Equanimity	.682	6.506	2	.039	.759	.814	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squa red	Nonce nt. Param eter	Obs erve d Pow er ^a
Equanimity	Sphericity Assumed	68.035	2	34.018	7.040	.003	.281	14.079	.907
	Greenhouse- Geisser	68.035	1.517	44.835	7.040	.006	.281	10.682	.836
	Huynh-Feldt	68.035	1.628	41.794	7.040	.005	.281	11.460	.855
	Lower-bound	68.035	1.000	68.035	7.040	.016	.281	7.040	.709
	Sphericity Assumed	173.965	36	4.832					
Error (Equanimity)	Greenhouse- Geisser	173.965	27.314	6.369					
	Huynh-Feldt	173.965	29.302	5.937					
	Lower-bound	173.965	18.000	9.665					

a. Computed using alpha = .05

Equanimity – Pairwise Comparisons

Estimates

Equanimity	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	9.421	.710	7.928	10.914
2	11.789	.638	10.449	13.130
3	11.684	.645	10.330	13.038

Pairwise Comparisons

(I) Equanimity	(J) Equanimity	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-2.368 [*]	.710	.011	-4.242	-.495

2	3	-2.263	.871	.055	-4.563	.037
	1	2.368*	.710	.011	.495	4.242
	3	.105	.512	1.000	-1.247	1.458
3	1	2.263	.871	.055	-.037	4.563
	2	-.105	.512	1.000	-1.458	1.247

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Emotional Regulation - ANOVA

Within-Subjects Factors

EmotionalRegulation	Dependent Variable
1	EmoRegPre
2	EmoRegEnd
3	EmoReg1mf

Descriptive Statistics

	Mean	Std. Deviation	N
EmoRegPre	10.9474	5.58245	19
EmoRegEnd	16.8421	3.33772	19
EmoReg1mf	18.1053	4.89779	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
EmotionalRegulation	.721	5.553	2	.062	.782	.843	.500

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Emotional Regulation Sphericity Assumed	554.667	2	277.333	31.135	.000	.634	62.270	1.000

Error (Emotional Regulation)	Greenhouse- Geisser	554.667	1.564	354.617	31.135	.000	.634	48.69 9	1.000
	Huynh-Feldt	554.667	1.686	328.894	31.135	.000	.634	52.50 8	1.000
	Lower-bound	554.667	1.000	554.667	31.135	.000	.634	31.13 5	1.000
	Sphericity Assumed	320.667	36	8.907					
	Greenhouse- Geisser	320.667	28.154	11.390					
	Huynh-Feldt	320.667	30.356	10.563					
	Lower-bound	320.667	18.000	17.815					

a. Computed using alpha = .05

Emotional Regulation – Pairwise Comparisons

Estimates

EmotionalRegulation	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	10.947	1.281	8.257	13.638
2	16.842	.766	15.233	18.451
3	18.105	1.124	15.745	20.466

Pairwise Comparisons

(I) EmotionalRegulation	(J) EmotionalRegulation	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-5.895 [*]	1.100	.000	-8.798	-2.992
	3	-7.158 [*]	1.077	.000	-10.000	-4.316
2	1	5.895 [*]	1.100	.000	2.992	8.798
	3	-1.263	.666	.222	-3.021	.494
3	1	7.158 [*]	1.077	.000	4.316	10.000
	2	1.263	.666	.222	-.494	3.021

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Social Skills - ANOVA

Within-Subjects Factors

Socialskills	Dependent Variable
1	SocialSkillsPre
2	SocialSkillsEnd
3	SocialSkills1mf

Descriptive Statistics

	Mean	Std. Deviation	N
SocialSkillsPre	6.3158	1.70139	19
SocialSkillsEnd	7.4737	1.71167	19
SocialSkills1mf	7.7368	1.55785	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx . Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Socialskills	.927	1.295	2	.523	.932	1.000	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Socialskills	Sphericity Assumed	21.719	2	10.860	5.359	.009	.229	10.719	.809
	Greenhouse-Geisser	21.719	1.863	11.656	5.359	.011	.229	9.986	.787
	Huynh-Feldt	21.719	2.000	10.860	5.359	.009	.229	10.719	.809
	Lower-bound	21.719	1.000	21.719	5.359	.033	.229	5.359	.591
	Sphericity Assumed	72.947	36	2.026					
Error(Social skills)	Greenhouse-Geisser	72.947	33.541	2.175					
	Huynh-Feldt	72.947	36.000	2.026					

Lower-bound	72.947	18.000	4.053					
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a. Computed using alpha = .05

Social Skills – Pairwise Comparisons

Estimates

Socialskills	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	6.316	.390	5.496	7.136
2	7.474	.393	6.649	8.299
3	7.737	.357	6.986	8.488

Pairwise Comparisons

(I) Socialskills	(J) Socialskills	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-1.158*	.434	.047	-2.304	-.012
	3	-1.421*	.520	.041	-2.795	-.048
2	1	1.158*	.434	.047	.012	2.304
	3	-.263	.425	1.000	-1.384	.858
3	1	1.421*	.520	.041	.048	2.795
	2	.263	.425	1.000	-.858	1.384

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Distress Tolerance – ANOVA

Within-Subjects Factors

Distresstolerance	Dependent Variable
1	DistressTolerancePre
2	DistressToleranceEnd
3	DistressTolerance1mf

Descriptive Statistics

	Mean	Std. Deviation	N
DistressTolerancePre	6.3684	2.33834	19
DistressToleranceEnd	8.4211	2.45664	19
DistressTolerance1mf	8.8947	1.96906	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Distresstolerance	.646	7.425	2	.024	.739	.789	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Distress tolerance	Sphericity Assumed	68.526	2	34.263	10.807	.000	.375	21.613	.985
	Greenhouse-Geisser	68.526	1.477	46.389	10.807	.001	.375	15.964	.953
	Huynh-Feldt	68.526	1.578	43.436	10.807	.001	.375	17.049	.962
	Lower-bound	68.526	1.000	68.526	10.807	.004	.375	10.807	.874
Error(Distress tolerance)	Sphericity Assumed	114.140	36	3.171					
	Greenhouse-Geisser	114.140	26.590	4.293					
	Huynh-Feldt	114.140	28.398	4.019					
	Lower-bound	114.140	18.000	6.341					

a. Computed using alpha = .05

Distress Tolerance – Pairwise Comparisons

Estimates				
Distresstolerance	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	6.368	.536	5.241	7.495
2	8.421	.564	7.237	9.605
3	8.895	.452	7.946	9.844

Pairwise Comparisons						
(I) Distresstolerance	(J) Distresstolerance	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-2.053*	.673	.021	-3.829	-.276
	3	-2.526*	.641	.003	-4.219	-.833
2	1	2.053*	.673	.021	.276	3.829
	3	-.474	.370	.649	-1.449	.502
3	1	2.526*	.641	.003	.833	4.219
	2	.474	.370	.649	-.502	1.449

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Taking Responsibility – ANOVA

Within-Subjects Factors	
Takingresponsibility	Dependent Variable
1	TakingResponsibilityPre
2	TakingResponsibilityEnd
3	TakingResponsibility1mf

Descriptive Statistics			
	Mean	Std. Deviation	N
TakingResponsibilityPre	6.0000	2.23607	19
TakingResponsibilityEnd	8.6316	1.94966	19
TakingResponsibility1mf	8.3158	2.26207	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Takingresponsibility	.938	1.083	2	.582	.942	1.000	.500

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Takingresponsibility	Sphericity Assumed	78.456	2	39.228	22.224	.000	.553	44.448
	Greenhouse-Geisser	78.456	1.884	41.648	22.224	.000	.553	41.865
	Huynh-Feldt	78.456	2.000	39.228	22.224	.000	.553	44.448
	Lower-bound	78.456	1.000	78.456	22.224	.000	.553	.994
Error(Takingresponsibility)	Sphericity Assumed	63.544	36	1.765				
	Greenhouse-Geisser	63.544	33.908	1.874				
	Huynh-Feldt	63.544	36.000	1.765				
	Lower-bound	63.544	18.000	3.530				

a. Computed using alpha = .05

Taking Responsibility – Pairwise Comparisons**Estimates**

Takingresponsibility	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	6.000	.513	4.922	7.078
2	8.632	.447	7.692	9.571
3	8.316	.519	7.226	9.406

Pairwise Comparisons

(I)	(J)	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-2.632 [*]	.447	.000	-3.812	-1.451
	3	-2.316 [*]	.465	.000	-3.544	-1.087
2	1	2.632 [*]	.447	.000	1.451	3.812
	3	.316	.375	1.000	-.674	1.306
3	1	2.316 [*]	.465	.000	1.087	3.544
	2	-.316	.375	1.000	-1.306	.674

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Interpersonal Effectiveness - ANOVA

Within-Subjects Factors

Interpersonaleffectiveness	Dependent Variable
1	InterpersonalEffectivenessPre
2	InterpersonalEffectivenessEnd
3	InterpersonalEffectiveness1mf

Descriptive Statistics

	Mean	Std. Deviation	N
InterpersonalEffectivenessPre	8.0000	1.63299	19
InterpersonalEffectivenessEnd	8.2105	2.04339	19
InterpersonalEffectiveness1mf	8.2632	2.05053	19

Mauchly's Test of Sphericity^a

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Interpersonaleffectiveness	.895	1.881	2	.390	.905	1.000	.500

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Interpersonaleffectiveness	Sphericity Assumed	.737	2	.368	.116	.890	.006	.233	.066
	Greenhouse-Geisser	.737	1.810	.407	.116	.872	.006	.211	.066
	Huynh-Feldt	.737	2.000	.368	.116	.890	.006	.233	.066
	Lower-bound	.737	1.000	.737	.116	.737	.006	.116	.062
	Sphericity Assumed	113.930	36	3.165					
Error (Interpersonaleffectiveness)	Greenhouse-Geisser	113.930	32.500	3.496					
	Huynh-Feldt	113.930	36.000	3.165					
	Lower-bound	113.930	18.000	6.329					
	Sphericity Assumed	113.930	36	3.165					

a. Computed using alpha = .05

Interpersonal Effectiveness – Pairwise Comparisons

Estimates

Interpersonaleffectiveness	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	8.000	.375	7.213	8.787
2	8.211	.469	7.226	9.195
3	8.263	.470	7.275	9.251

Pairwise Comparisons

(I)	Interpersonal effectiveness	(J) Interpersonal effectiveness	Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
						Lower Bound	Upper Bound
1		2	-.211	.487	1.000	-1.496	1.075
		3	-.263	.582	1.000	-1.798	1.272
2		1	.211	.487	1.000	-1.075	1.496
		3	-.053	.651	1.000	-1.771	1.665
3		1	.263	.582	1.000	-1.272	1.798
		2	.053	.651	1.000	-1.665	1.771

Based on estimated marginal means. a. Adjustment for multiple comparisons: Bonferroni.

Norms Comparisons – Pre-program**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
MSESTpre	19	47.0526	9.65214	2.21435

One-Sample Test

	Test Value = 59.96					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
MSESTpre	-5.829	18	.000	-12.90737	-17.5595	-8.2552

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
EmoRegPre	19	10.9474	5.58245	1.28070

One-Sample Test

	Test Value = 15.27					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
EmoRegPre	-3.375	18	.003	-4.32263	-7.0133	-1.6320

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
EquanimityPre	19	9.4211	3.09688	.71047

One-Sample Test

	Test Value = 10.33					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
EquanimityPre	-1.279	18	.217	-.90895	-2.4016	.5837

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
SocialSkillsPre	19	6.3158	1.70139	.39033

One-Sample Test

	Test Value = 8.36					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
SocialSkillsPre	-5.237	18	.000	-2.04421	-2.8643	-1.2242

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
DistressTolerancePre	19	6.3684	2.33834	.53645

One-Sample Test

	Test Value = 8.34					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DistressTolerancePre	-3.675	18	.002	-1.97158	-3.0986	-.8445

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
TakingResponsibilityPre	19	6.0000	2.23607	.51299

One-Sample Test

	Test Value = 8.3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
TakingResponsibilityPre	-4.484	18	.000	-2.30000	-3.3778	-1.2222

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
InterpersonalEffectivenessPre	19	8.0000	1.63299	.37463

One-Sample Test

	Test Value = 9.35					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
InterpersonalEffectivenessPre	-3.604	18	.002	-1.35000	-2.1371	-.5629

Norms Comparisons – Post-program**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
MSESTend	19	61.1579	8.71310	1.99892

One-Sample Test

	Test Value = 59.96					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
MSESTend	.599	18	.556	1.19789	-3.0017	5.3975

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
EmoRegEnd	19	16.8421	3.33772	.76572

One-Sample Test

	Test Value = 15.27					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
EmoRegEnd	2.053	18	.055	1.57211	-.0366	3.1808

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
EquanimityEnd	19	11.7895	2.78047	.63788

One-Sample Test

	Test Value = 10.33					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
EquanimityEnd	2.288	18	.034	1.45947	.1193	2.7996

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
SocialSkillsEnd	19	7.4737	1.71167	.39268

One-Sample Test

	Test Value = 8.36					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
SocialSkillsEnd	-2.257	18	.037	-.88632	-1.7113	-.0613

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
DistressToleranceEnd	19	8.4211	2.45664	.56359

One-Sample Test

	Test Value = 8.34					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DistressToleranceEnd	.144	18	.887	.08105	-1.1030	1.2651

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
TakingResponsibilityEnd	19	8.6316	1.94966	.44728

One-Sample Test

	Test Value = 8.30					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
TakingResponsibilityEnd	.741	18	.468	.33158	-.6081	1.2713

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
InterpersonalEffectivenessEnd	19	8.2105	2.04339	.46879

One-Sample Test

	Test Value = 9.35					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
InterpersonalEffectivenessEnd	-2.431	18	.026	-1.13947	-2.1244	-.1546

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	15	93.8	93.8	93.8
	Male	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

	N	Minimum	Maximum	Mean	Std. Deviation
Age	16	47.416	75.916	62.41625	8.086426
Valid N (listwise)	16				

Pre-program.

Correlations

[illegible]

AnxietyPre	Pears	-.444	-.205	-.388	-.203	-.362	-.246	-.142	1	.499*	.711*
	on										
	Correl										
	ation										
DepressionPre	Sig.	.085	.445	.138	.451	.168	.358	.600		.049	.002
	(2-										
	tailed)										
	N	16	16	16	16	16	16	16	16	16	16
StressPre	Pears	-.386	-.356	-.237	.018	-.249	-.265	.081	.499*	1	.545*
	on										
	Correl										
	ation										
StressPre	Sig.	.140	.176	.378	.947	.353	.321	.764	.049		.029
	(2-										
	tailed)										
	N	16	16	16	16	16	16	16	16	16	16
StressPre	Pears	-	-.500*	-.370	-.182	-.290	-.655**	-.101	.711**	.545*	1
	on	.667**									
	Correl										
	ation										
StressPre	Sig.	.005	.049	.159	.501	.276	.006	.710	.002	.029	
	(2-										
	tailed)										
	N	16	16	16	16	16	16	16	16	16	16

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Post-program.

		Correlations									
		MSE STen d	EmoR egEnd	Equani mityEnd	SocialSk illsEnd	DistressTol eranceEnd	TakingRespon sibilityEnd	InterpersonalEffe ctivenessEnd	Anxiet yEnd	Depress ionEnd	Stres sEnd
MSESTend	Pears on Corre lation	1	.809**	.650**	.160	.717**	.736**	.161	-.321	-.445	- .503 [†]
	Sig. (2- tailed)		.000	.006	.555	.002	.001	.551	.225	.084	.047
	N	16	16	16	16	16	16	16	16	16	16
	Pears on Corre lation	.809**	1	.477	.144	.406	.736**	-.200	-.252	-.316	-.413
EmoRegEnd	Sig. (2- tailed)	.000		.062	.593	.119	.001	.458	.347	.233	.112
	N	16	16	16	16	16	16	16	16	16	16
	Pears on Corre lation	.650**	.477	1	-.276	.303	.503 [†]	-.171	- .722**	-.573 [†]	-.366
	Sig. (2- tailed)	.006	.062		.301	.255	.047	.526	.002	.020	.163
EquanimityEnd	N	16	16	16	16	16	16	16	16	16	16
	Pears on Corre lation	.160	.144	-.276	1	.077	-.005	-.098	.377	.022	-.375
	Sig. (2- tailed)	.555	.593	.301		.778	.986	.719	.150	.935	.153
	N	16	16	16	16	16	16	16	16	16	16
SocialSkillsEnd	Pears on Corre lation	.160	.144	-.276	1	.077	-.005	-.098	.377	.022	-.375
	Sig. (2- tailed)	.555	.593	.301		.778	.986	.719	.150	.935	.153
	N	16	16	16	16	16	16	16	16	16	16
	Pears on Corre lation	.160	.144	-.276	1	.077	-.005	-.098	.377	.022	-.375

StressEnd	Sig.	.084	.233	.020	.935	.139	.403	.076	.011		.011
	(2-tailed)										
	N	16	16	16	16	16	16	16	16	16	16
	Pearson	-.503	-.413	-.366	-.375	-.410	-.261	.224	.251	.618	1
	Correlation										
	Sig.	.047	.112	.163	.153	.114	.330	.404	.349	.011	
	(2-tailed)										
	N	16	16	16	16	16	16	16	16	16	16

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).